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THE PRODUCTION OF ULCER OF THE STOMACH BY INJECTION OF STREPTOCOCCI *

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Hemorrhages, superficial erosions and definite ulceration of the mucous membrane of the stomach and duodenum occur not infrequently during severe infections in man and in experimentally infected or otherwise severely intoxicated animals. In some of these instances there can be no question but that infection in some instances plays a rôle in the etiology of ulcer.[1] Ulcer also has been produced experimentally by injecting bacteria into the gastric artery. The association of mouth and tonsillar infections with ulcer of the stomach has been emphasized. It is said that ulcer of the stomach is more common in regions in which throat infections are particularly prevalent. Clinicians have observed aggravation of symptoms in ulcer of the stomach or duodenum following sore throat. Experimental proof, however, showing that certain bacteria may have a special affinity for the stomach mucous membrane, producing a localized infection, and hence may play a rôle in the causation of the common acute and chronic peptic ulcer in man where the usual symptoms of infection are slight or wholly absent has not been brought forward. In a short note on the etiology of rheumatism[2] I pointed out that ulcer of the stomach followed not infrequently intravenous injections of organisms isolated from rheumatism, especially after animal passage; of laboratory strains of streptococci after they had attained a certain grade of virulence from animal passage, and of emulsions of tonsils which were removed chiefly during convalescence in cases of rheumatic arthritis. I wish here to report experiments along this line.

Ulcer of the stomach or duodenum, or both, have been produced by intravenous injection of certain streptococci in eighteen rabbits, six dogs and in one monkey. The ulcers are usually single, although at times two or more may be present. The primary hemorrhages and later the ulcers are small and deep. The base of the ulcer is usually clean or filled with a brownish blood-clot. There may or may not be a localized peritonitis. Perforation into surrounding adhesions occurred in two dogs and in the monkey. The tendency to bleeding in these ulcers is great. Two dogs died of an acute hemorrhage, while another was bleeding when chloroformed. The rabbits often showed considerable blood in the intestines, although death could not be attributed definitely to hemorrhage in any. Both punctate hemorrhages and ulcers have been found most frequently in the pyloric end of the stomach, then in the fundus, and least often in the duodenum. It should be pointed out that the hemorrhages and ulcers in these experiments are small and sharply circumscribed, and there is not the tendency to digestion and sloughing of mucous membrane—in contradistinction to hemorrhages and erosions—observed after anaphylactic shock, after overwhelming bacteriemic infections and other severe intoxications. In most of the rabbits and in some of the dogs which showed ulcers there was also arthritis, in some myositis and the picture of an "ascending" nephritis. Cholecystitis, with beginning formation of gall-stones, and appendicitis have also been found.

It must not be supposed that the ulcers are accidental, because they occur, commonly, only when streptococci of a certain grade of virulence are injected. To illustrate: Strain 319, originally a pneumococcus which was isolated from the blood in lobar pneumonia six years ago, and which had lost its virulence, resembling now a streptococcus, was passed through nineteen rabbits. The first thirteen passages (intravenous injections) failed to show ulcer in any, while the next six passages showed ulcer of stomach three times. Strain R51A, originally a pneumococcus isolated from the blood in pneumonia nearly eleven years ago but recently transformed into a hemolytic streptococcus, was passed successively through twenty rabbits. In the first fifteen animals ulcer was not found, while the next five passages showed ulcer of stomach twice. The strains from rheumatism before animal passage produced ulcer in two out of sixteen animals; after from two to five passages ulcer was produced in seven out of eighteen rabbits, while after from five to ten passages again only once in eight animals injected. When the virulence is very low ulcer occurs very rarely; when virulence is of a certain grade, slightly higher than that of the streptococcus from rheumatism, it occurs commonly; but when the virulence becomes still higher ulceration of the mucous membrane is again rare. It is practically impossible to produce this type of ulcer of the stomach with *Streptococcus viridans* as isolated from the blood in endocarditis or with highly virulent hemolytic streptococci or pneumococci.

The grade of virulence of the organisms when ulcer is obtained, commonly, is such that they disappear from the general circulation and the uninjured tissues. This fact afforded opportunity to study the exact relation of the organisms injected to the small areas of hemorrhage in the mucous membrane and to the ulcers. The areas of hemorrhage and ulcers were cut out, in four animals, together with corresponding pieces of the healthy stomach wall, washed thoroughly in repeated changes of sodium chlorid solution, crushed in a mortar, suspended

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1. For a comprehensive discussion and bibliography on the pathogenesis of ulcer of the stomach see Möller: Ergebn. d. inn. Med., 1911, vii, 520.

2. Rosenow, E. C.: The Etiology of Articular and Muscular Rheumatism, THE JOURNAL A. M. A., April 19, 1913, p. 1223.

in sodium chlorid solution and a series of blood-agar plates made. Cultures from the blood were also made. In one animal which died twenty-four hours after a third injection the blood still contained a moderate number of streptococci. Streptococci were recovered from the healthy, the hemorrhagic and the ulcerated area. The healthy area showed five, the hemorrhagic area eighty-two, the ulcerated area sixty colonies. Saprophytic bacilli and colon bacillus were present in small numbers in each. In the other three in which the blood was sterile the cultures from the healthy portion showed no streptococci in any, while the ulcerated or hemorrhagic areas yielded streptococci in varying numbers in each instance. Smears and blood-agar plate cultures from the case in other acute and in more chronic ulcers showed streptococci resembling those injected.

Fig. 1.—Necrosis with beginning ulceration of mucous membrane of stomach in a dog injected intravenously thirteen days previously with a streptococcus of low virulence; from photograph × 5.

Fig. 2.—Deep, round ulcer at pyloric end of stomach of dog injected intravenously one month previously with a strain from rheumatism after ten animal passages; from photograph × 5.

MICROSCOPIC ANATOMY

The areas of hemorrhage which occur within twenty-four hours after injection usually extend through the whole thickness of the mucous membrane. The blood escapes from the capillaries in the acini and not from a larger vessel in the submucosa. It is most marked and extends over a wider area as the inner surface is reached. Leukocytic infiltration is already present in twenty-four hours, while at the end of forty-eight hours when ulceration has begun it is often quite marked and later is found to extend into the submucosa and muscular coat. The reaction indicating an infection in some ulcers largely disappears after the ulcer has existed for a long time. This is especially so in those ulcers in which invasion of the underlying structures is absent or slight.

The ulceration begins on the surface and rapidly extends to the submucosa. The tendency to invade the submucous and muscular coat is marked and was present in every instance when marked hemorrhage was observed (Fig. 5). The margins are usually abrupt, often undermined and infiltrated. The early picture is well illustrated in Figure 6 and the later appearance in Figure 5. In the former ulceration has not yet extended through the entire thickness of the mucous membrane, whereas in the latter the round-cell infiltration and ulceration have extended well into the muscular coat. In the latter there is a layer of leukocytic infiltration invading the normal tissue. Inside of this the cells show granular degeneration, the nuclei become fragmented as they lose

Fig. 3.—Ulcer of stomach in monkey injected intravenously with a strain of streptococcus from rheumatism after it had been converted into the hemolyzing variety and passed through one animal; from photograph × 5.

their affinity for stains until finally a more or less homogeneous necrotic layer lines the ulcer. In horizontal sections the ducts along the margin of the ulcer frequently are found to contain leukocytes and red blood-corpuscles. Under high power the early infiltration in the wall of the ulcer is found to be made up chiefly of leukocytes and red blood-corpuscles; later lymphocytes and large mononuclear cells predominate. Here, also, what appear to be plasma cells are found in small numbers. Giant cells have not been observed. The chief cells disintegrate earlier than the parietal cells, giving the erroneous impression that the latter have actively multiplied. The connective tissue stroma of the acini is most resistant and can be made out for considerable distance beyond the place where the other cells, including leukocytes, have disappeared.

Thrombosis of adjacent blood-vessels has not been found in the acute ulcers but has been found in veins in two of the more chronic, deep ulcers in dogs. One of these died of acute hemorrhage. The other was chloroformed while bleeding was going on. Sections stained

V. 61
1913

for bacteria by the Gram-Weigert method showed diplococci and short chains in the ulcers, as early as forty-eight hours and as long as twenty-eight days after single injections of streptococci. These were found here repeatedly when the cultures proved their absence in the blood, pelvis of kidney, joints and gall-bladder. Figure 7 shows a moderate number of organisms. They are approximately half way between the free surface of the ulcer and where the cells still stain in a normal way. In this instance the injection of an emulsion from the tonsils was made thirteen days previously (see protocol, Dog 22). The organisms were easy to find. Some areas showed many hundred streptococci in linear arrangement in the connective tissue stroma of the disintegrating acini. Single diplococci were found in the deeper and less disintegrated areas (Fig. 7). The ulcer in one dog which was chloroformed twenty-eight days after a single injection showed fewer diplococci, well down from the free surface of the ulcer. Leukocytic infiltration in this instance had almost entirely disappeared.

It is interesting to note that in all the examinations which were made for bacteria only two Gram-staining bacilli were found and these were on the surface of the ulcerated area. Gram-staining diplococci were found in the thrombus of an adjacent vein in one instance. A painstaking search for similar organisms was made in the normal structures away from the ulcer, but none were found.

Fig. 4.—Ulcer of duodenum just beyond pyloric ring in rabbit injected intravenously with a streptococcus of low virulence.

ILLUSTRATIVE PROTOCOLS

The rabbits were fed carrots, hay and oats, the dogs a mixed diet with liberal quantities of meat.

RABBIT 475.—Injected intravenously on May 9, 12, 15 and 19, with the growth from 16 c.c. of ascites-dextrose-broth of Strain 744 from a case of articular and muscular rheumatism. May 19: Lameness in and swelling of right knee-joint; very ill. May 22: Chloroformed and examined at once. A few lesions in the flat muscle of the groins and shoulder. Myocardium, gray and flabby, shows a few whitish areas in papillary muscles. Clear fluid in pericardial sac. Fluid from three joints turbid, containing leukocytes, while that from another joint is clear. The stomach is normal except for the presence of two circumscribed, punched-out ulcers in the pyloric end. The larger is 4 by 2 mm. The base of each is occupied by brownish clotted blood. The margins are elevated, undermined and infiltrated (Figs. 4 and 6). Duodenum is normal. The contents of the large bowel are dark brown in color and give a strong Weber test for blood. The kidneys show no changes except a few whitish elongated areas in the medullary portion. The gall-bladder is filled and the ducts are distended with a slightly greenish viscid mucus containing large masses of pus. Pressure on the gall-bladder, after the plug of pus and concretions in the ampulla of Vater is removed, easily expels the contents into the lumen of the intestines. The masses of pus, on washing and disintegration, are found to contain concretions the size of millet-seed which have the consistency of putty. Smears of the pus show many leukocytes and streptococci. The addition of hydrochloric acid to the concretions liberates carbon dioxid. In the wall of the gall-bladder are found three small round whitish areas which seem to involve chiefly the mucous membrane. Over the largest of these at the fundus there is an adhesion to the omentum.

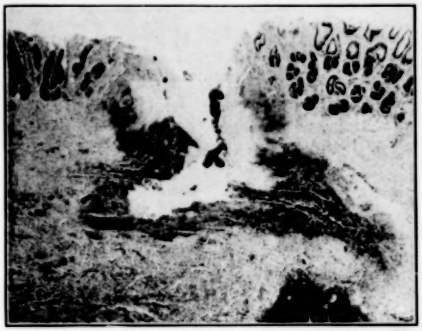

Fig. 5.—Section of ulcer of stomach in Dog 22; died from hemorrhage (see protocol). Note the leukocytic infiltration in the submucosa at base of ulcer, the great depth and extension of the ulcer beyond the mucous membrane. Hematoxylin and eosin; from photograph × 35.

The lungs, liver, brain, intestines, appendix and adrenals show no changes. The spleen is not enlarged. Cultures from the blood, peritoneum, pericardium, pelvis of kidney and two joints prove sterile. The most turbid joint fluid gives a few and the bile a large number of slightly hemolytic streptococci in pure culture, while the base of one of the ulcers in the stomach gives a few of these and saprophytes. One of the concretions, thoroughly washed in sodium chlorid solution, then crushed and used for plate cultures gives a pure culture of streptococci.

Fig. 6.—Section of ulcer of stomach in Rabbit 475. Note the hemorrhagic base (dark material), the tendency to undermining of margin, and the cellular infiltration at base. Hematoxylin and eosin; from photograph × 19.

Dog 22.—Small young dog. Injected March 18, 1913, with 5 c.c. of an emulsion of a tonsil, removed from a patient following an attack of tonsillitis and articular rheumatism. March 19: Lame in left front leg. Smears from left front wrist-joint show leukocytes and Gram-positive diplococci. Cultures yield green colonies only. March 21: Cultures from blood show a few hemolytic colonies only. Lameness still present, wrist-joint swollen. March 24: Lameness absent, wrist-joint no longer swollen, has lost in weight, lies quietly in corner, drinks water but eats little. Cultures from blood negative. March 29: Still quite well but has grown thin, does not eat. March 30: Dead. Muscles, mucous membrane and other tissues very pale; hemoglobin 12 per cent. Smears from the blood show a few reds and leukocytes. Recent, probably agonal, intussusception at ileocecal valve, easily reduced. Large quantity of partially digested blood in bowel above intussusception, nothing below. Stomach normal except for a deep ulcer in the pyloric ring, measuring 7 by 4 mm., long diameter vertical. The ulcer is filled with a brownish blood-clot, the margins infiltrated and grayish red (Fig. 5). The peritoneum is thickened directly over the ulcer and there is adhesion to the omentum. Heart, kidneys, liver, spleen, adrenals and brain show no changes. Cultures from blood, pericardium, joints, pelvis of kidney and bile sterile, but a blood-plate from material at the base of the ulcer after removing the blood-clot gives an almost pure culture of streptococci (Fig. 7).

Dog 21.—Small, brown and white. Injected intravenously March 13, with the growth from 300 c.c. of ascites-dextrose-broth of Strain 734, ten animal passages after isolation from a case of rheumatism. Dyspnea, vomiting and great weakness following injection. March 14: Seems fairly well but has developed severe double conjunctivitis; smears from pus contain Gram-staining diplococci. March 15: Blood-agar plates from pus from eyes show almost pure cultures of green colonies resembling those injected. March 18: Seems ill; has lost in weight. Marked tenderness and swelling of right wrist and elbow-joints. Muscles of back and about shoulders seem tender. March 21: Cultures from joints show few green colonies. Seems better but eats very little and continues to lose in weight. Heart action slow and very irregular. Discharging sinus above right wrist. March 23: Cultures from discharging sinus contain chiefly green colonies. April 10: Chloroformed. Mucous membrane and tissues quite pale. Sinus above wrist leads along muscle sheaths. Fluid from elbow-joint turbid; no connection between elbow-joint and the suppuration adjacent to it. Pericardium empty; whitish linear areas in myocardium; endocardium normal except for a nodular thickening in posterior leaflet of tricuspid valve. Localized adhesive pleuritis. Stomach normal. Duodenum shows a rather large, round ulcer, 2.5 cm. from the pyloric ring and measuring 8 mm. in diameter. The margin is thickened and undermined, the base covered with a brownish blood-clot. The omentum is adherent. The contents of the large intestine blackish and gives a strong Weber test for blood. Liver shows moderate fatty degeneration. The kidneys present a number of small whitish areas in cortex. There are a number of whitish streaks in skeletal muscles, most numerous in the muscles about shoulder and in intercostal muscles; none in diaphragm. Several teeth are loose and there is osteomyelitis of lower jaw. Smears from pus around elbow-joint and lower jaw contain large numbers of Gram-staining diplococci. Cultures from blood, pelvis of kidney and pericardial sac sterile, from elbow-joint give a moderate number, from pus of discharging sinus and pus in lower jaw a large number of slightly hemolyzing colonies.

Fig. 7.—Streptococci in the disintegrating connective tissue in the margin of the ulcer shown in Figure 5; × 1200.

Monkey.—Injected into vein of forearm on March 18 and 20 with the growth from 100 c.c. ascites-dextrose-broth of Strain 734II. Died on April 2 after severe diarrhea. Only the changes in the stomach are given here. The stomach is normal except for three deep ulcers, two near the pyloric end, the other and the largest in the pyloric ring. All have a clean base and are undermined with infiltrated margins. The largest has bridges of mucous membrane over undermined portions (Fig. 3). The omentum is adherent and, on dissection of the adhesions over the largest ulcer, a small perforation of the serous coat is found. Small intestines normal. The mucous membrane of the large intestines is red, the lymph follicles are much swollen and a number show superficial ulceration. The lymph-nodes in the mesentery and about the pyloric end of the stomach are enlarged and hyperemic. Purulent material in one ulcer in the stomach shows saprophytes and colon bacilli only, but from a small piece of the wall of one ulcer, thoroughly washed and crushed, there are obtained in addition to a few contaminating organisms fifteen colonies of streptococci, whereas a similar portion of adjacent healthy mucous membrane shows no streptococci.

SUMMARY

Intravenous injection of streptococci of the proper grade of virulence may be followed by ulcer of stomach and duodenum. The ulceration is due to a localized infection and secondary digestion. The ulcers are usually single and deep with marked tendency to hemorrhage and perforation, and resemble the human gastric ulcer in many respects. When we take into consideration this close resemblance, that injection of streptococci which have grown in tonsils produce the lesions, and that the virulence of the germs when the affinity for the stomach is greatest is of such character that a general infection does not occur, it appears altogether reasonable to suppose that in man gastric ulcer may be caused by streptococci also. The supposed relation between infected tonsils or gums and gastric ulcer may be due not to the swallowing of bacteria, as usually supposed, but to the entrance into the blood of streptococci of the proper kind of virulence to produce a local infection in the wall of the stomach. Many other observations might be cited such as associated infections of the gall-bladder and appendix, which suggest that gastric ulcer may be due to streptococci.

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Then as Now.—We are prone to surround the past with a kind of mystic glamor. We do not give honor where honor is new, but reserve our panegyrics for times and methods whose inaccessibility denies all chance of refutation. For example, we think the middle ages knew something about toxicology. So they did, but not a tithe of what we vaguely give them credit for. The old apothecary was not a pocket Borgia. Men were asked out to dinner and they sometimes died after it. But *post cibos* is not necessarily *propter cibos*, and one man's meat was not always poison for another. There was not always death in the pot. If we look at a sixteenth-century menu we have a general feeling, not of amazement that men should occasionally die after a banquet, but rather of surprise at the survivors. Then it is probable that modern surgery would have saved some of these moribund postprandialists—that perforation, not poison, ushered them into the *Ewigkeit*. In fact, these terrible toxicologic tales suffer from exaggeration. The morality of the times demanded sudden death in convenient form, and an alleged supply arose. It is much the same as if our day was judged by its patent-medicine advertisements. Reading them, a truthful age would sigh and offer illimitable gold for what we can buy for 1s. 1½d. As a matter of fact, we do not buy them. We know that some men are liars now, but we forget that there were liars in those days.—*Med. Press.*

V. 61
1913

MILIARY TUBERCULOSIS OF THE PLACENTA

WITH INCIPIENT PULMONARY TUBERCULOSIS OF THE MOTHER BECOMING LATENT AFTER BIRTH OF CHILD

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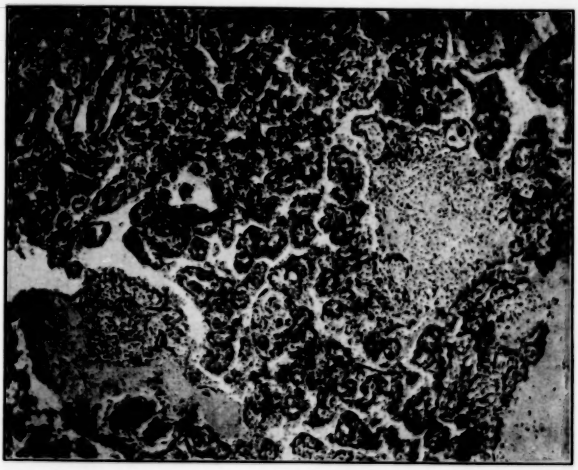
The case recorded here is of great importance in that it demonstrates the possibility of the transmission of tubercle bacilli to the fetus from a mother having an unrecognized latent tuberculosis of one apex. In the cases of placental tuberculosis recorded in the literature up to the present time there is no reported instance of such an occurrence; all of the cases of placental tuberculosis are given as occurring in association with advanced pulmonary or acute miliary tuberculosis of the mother. Tubercle bacilli, however, have been demonstrated by the antiformin method in placentas coming from mothers with incipient tuberculosis of the lungs, but no histologic evidences of tuberculosis were found in such placentas, and no congenital transmission of the disease to the offspring has been shown beyond doubt to occur in such cases.

It has been generally assumed that the entrance of tubercle bacilli into the blood-stream and their lodgment in the placental sinuses is a rare event, likely to occur only in pregnant women showing a late stage of pulmonary tuberculosis. If it can be shown that in pregnant women who have incipient pulmonary tuberculosis lesions the bacilli may enter the circulation under the influence of pregnancy and cause a miliary tuberculosis of the placenta or congenital infection of the fetus, the sociologic and eugenic aspects of the transmission of tuberculosis from parent to child become greatly increased in importance. It is generally recognized that the influence of pregnancy on maternal tuberculosis is bad; and observations are only too frequent of the kindling of incipient and latent pulmonary lesions and the exacerbation of more severe processes through this factor. While the majority of writers on tuberculosis concede that pregnancy acts unfavorably on the disease so far as the mother is concerned, practically all unite in minimizing the dangers of congenital transmission to the progeny of such tuberculous mothers, and this in spite of the not slowly accumulating cases of placental tuberculosis. For that reason especially I regard this additional case of placental tuberculosis discovered in my laboratory as of very great importance in throwing more light on the possibility of such a transmission.

All placentas obtained in Dr. Peterson's obstetric clinic in the university hospital are subjected to a routine gross and microscopic study in the pathologic laboratory. During the course of such routine examination, a placenta sent to the laboratory on Oct. 28, 1912, was found by me, on microscopic examination, to contain miliary tubercles in practically every section. Inasmuch as the history of the mother sent with the placenta made no mention of the existence of tuberculosis or the possibility of such disease in her, my interest was at once excited in the case, and it was studied from all possible angles. The history of the mother as given was entirely negative as to tuberculosis, as follows:

Miss A. B., a domestic, aged 20, was admitted to the University Psychopathic Hospital in February, 1912, with "hysteric insanity." At the age of 18 she had measles and scarlet fever and since has been very "nervous." There is no family history of tuberculosis and the patient, so far as she knows, has never been exposed to the disease. When she entered the hospital she gave a rather definite history of gonorrhea. Physical examination in other respects was negative except that she was found to be pregnant and was referred to the maternity ward, where after an apparently normal pregnancy she gave birth to a viable child on October 28. The placenta was tagged with the mother's name as soon as delivered and the course of the specimen is known without chance for error. When



Two miliary tubercles from placenta; one, at the right, is healing; at the left is one more recent, epithelioid and situated on the chorionic stem; a latent lesion was in right apex of mother.

the diagnosis of miliary tuberculosis of the placenta was returned the mother was referred to the medical clinic for a thorough examination. The findings again were negative except that at times the pulse-rate was rather rapid (108) and on exertion she had a slight dyspnea.

Examination (by Dr. Hewlett Nov. 13, 1912).—Patient was referred for chest examination on account of miliary tubercles having been found in the placenta. Examination of chest shows that the right apex behind shows slight increase in fremitus, beyond the normal difference, slight impairment on percussion and somewhat harsh expiration. There are no râles. No active tuberculosis is found in the lungs, but there is some suspicion of a healed process at the right apex.

Examination (by Dr. Schmidt).—Eyelids are slightly puffy; hands are cold and clammy, with slight cyanosis of the finger tips. No enlarged lymph-nodes are found in the neck. The right upper chest expands less than the left. Litten's sign is not seen on either side. The right upper is not so full below the clavicle as is the left upper. Expiration is rather harsh

over the right upper in front. The back shows slight impairment over the right upper with slight increase in tactile fremitus, as well as of whispered and spoken voice. Expiration is somewhat increased over the right upper behind. No râles are heard.

Tuberculin Tests.—There is a slight reaction to 25 per cent. in ninety-six hours (von Pirquet).

Subcutaneous Test.—Two mg. of tuberculin were injected at 10 a. m., November 5; at 2 p. m., November 6, there was slight redness around area of injection, and area was very tender. Highest temperature was 99.2 F. Dec. 7, 1912, patient was given 5 mg. of tuberculin, subcutaneously. On noon of the following day, temperature reached 99.7 F., falling to normal toward evening. The area of injection was red, indurated and tender. No râles were heard.

Roentgenoscopy reveals slight increase of root shadows but no definite sign of tuberculosis.

Medical examination shows a positive tuberculin test, a suspicious right apex, but no evidence of active disease.

From these examinations it is evident that the patient has had an incipient tuberculosis of the right apex, now no longer active. It can be inferred that earlier in pregnancy this apical lesion was active for a time, and that bacilli then escaped into the blood-stream and into the interchorionic spaces. This assumption is supported by the character of the placental lesions. In practically every section made of this placenta there were miliary tubercles, in all respects characteristic histologically. The average section contained from four to six tubercles. Very few of these tubercles were recent ones. No absolutely fresh miliary thrombi, such as characterize the early miliary tuberculosis of the placenta, were found. The majority of the tubercles were epithelioid in type with a tendency to healing, as shown by the development of a more mature connective tissue in and about the tubercle, some of the tubercles appearing more fibroid than the connective tissue of the villi. Giant-cells were not frequent. Many of the tubercles showed no caseation or only a slight central caseous change; only a few showed a marked central caseation. Tubercle bacilli could not be found in the epithelioid and healing tubercles, but were demonstrated in small numbers in the caseating tubercles. There is, therefore, no doubt as to the nature of the process. The healing tubercles are easily distinguished from small infarcts by their sharply circumscribed borders and by the fibroblastic proliferation of the villi included in the primary intervillous thrombus to form a compact epithelioid mass. When transition stages from the earliest form of the placental tubercle up to the healing stage are present, as in this material, there is little likelihood that any one who is familiar with the histologic characteristics of placental tubercles would hesitate in immediate recognition of the nature of the process; but if the healing forms alone were present and in small numbers there might be difficulty in such recognition. There are, however, but two things that need to be considered in the differential diagnosis: small localized areas of syphilitic chorionitis and small infarcts showing reparative changes. In the former the syphilitic process involves only the stroma of the villi, and the villi are not fused into a solid fibroblastic or fibroid mass; in the healing infarct the villi may be fused, but there is no fibroblastic formation, or only the slightest, between them.

The healing tubercle, on the other hand, may show outlines of some villi fused into an intervillous epithelioid or fibroblastic proliferation. In this case all stages of tubercles were present, although the majority were in the healing stage, and the presence of tubercle bacilli makes the diagnosis absolutely certain, although the histologic changes are in themselves sufficiently characteristic.

This case, therefore, presents a placental miliary tuberculosis of a low virulence, the majority of the tubercles being in a healing stage. It is very probable, then, that in the earlier months of pregnancy, most likely in the third or fourth month, a latent tubercle in the right apex became active, gave access to the blood of tubercle bacilli that lodged chiefly in the placenta, and produced there lesions that showed a tendency to heal. What other lesions were produced in the body of the mother we do not know. When she left the hospital she showed no signs of any other localizations, and unfortunately no additional history of her or her offspring has been obtainable. This report shows that even in the case of an unrecognized latent lesion in the lung of a pregnant woman tubercle bacilli may enter the circulation and produce a miliary placental tuberculosis. If this is possible it is also possible that under such circumstances the bacilli may pass the placenta and enter the body of the fetus. This case also emphasizes a point that I have made in previous papers on placental tuberculosis, that there is apparently some especial resistance on the part of fetal tissues to the tubercle bacillus, since tubercle bacilli have been found in large numbers in the liver and blood of infants without any histologic appearances of tuberculosis. The low virulence of the placental infection in this case may possibly be explained as the result of such a relative immunity on the part of the placental tissues. On the other hand, as the mother did not develop a miliary tuberculosis, the bacilli may have been of a feebly virulent strain (bovine?), or the number in the maternal blood-stream was small, and those found lodgment only in the placenta.

V. 61
1913

ABDOMINAL ADHESIONS*

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Every surgeon of experience has been impressed by the fact that certain patients are apt to form extensive adhesions following the simplest operation, done under perfect aseptic conditions, while other patients fail to form adhesions no matter how much the traumatism, nor how imperfect the technic. He has also found that certain patients will seemingly withstand a great amount of sepsis, while others die from very slight infections.

I have done a great deal of experimental work in the abdomens of both hogs and dogs, and have been impressed by the fact that hogs form extensive adhesions with the slightest provocation, while dogs do not form extensive adhesions as a rule. I have been equally impressed by the fact that hogs rarely die of sepsis, while dogs are very susceptible to infection, as proved by the fact that the farmer unsexes his sows without any preparation; without even washing his hands, which often contain every germ known to bacteriology; uses a piece of twine which he may find in the barnyard for closing the abdomen, and yet rarely has suppuration in the abdominal wound, and almost never has an animal die from peritonitis; while on the other hand, it is found that in unsexing bitches under the same circumstances, the great majority

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of them die. In other words, the hog with his tremendous resistance and rapid reparative processes, forms adhesions, but these adhesions are the result of the same

Fig. 1.—Reflected free edge of greater omentum sutured to lesser omentum for the purpose of separating the gall-bladder from the duodenum, thus preventing the reformation of adhesions.

beneficent process which so perfectly destroys the septic material. On the other hand, the dog dies because of a lack of these elements and process which form adhesions. A statement may then be made, that it is better to be a live hog with adhesions than a dead dog without adhesions. Adhesions may play a beneficent rôle or a harmful rôle. The process is beneficent in the first place, but in certain instances the adhesions may become harmful after their beneficent office has been fulfilled.

It is true in all the practice of medicine and surgery, that the physician's work is chiefly auxiliary. He cannot prevent the formation of adhesions, and it is well; but he can modify an excess of adhesion forming, or remove the harmful adhesions after they have formed.

About four years ago the late Joseph Price read, before the Southern Surgical Association, a paper entitled "Surgical Junk," in which he discussed the post-operative adhesion question. "Surgical junk" is a very expressive term, for the adhesions following reparative processes simply represent material that was brought to the scene of action for a purpose, and now has no further use. I have had the literature of this subject completely abstracted at the Surgeon-General's office. The most striking features of the literature are in its monotony and its inconsistency. All authors have discussed prevention, e. g.: all authors have discussed the wet and dry protective pads, one maintaining that he had performed 132 laparotomies with dry asepsis, with ten deaths, five of which were due to intestinal obstruction, while in seventy-six cases treated with moist asepsis, he had two deaths and no intestinal obstruction. An equally prominent authority reported 481 laparotomies with dry asepsis, and only one fatality from ileus, while with moist asepsis he had a very much higher rate. Other operators assert that exposure to the air is the principal cause of adhesions; others that trauma is the principal cause, and still others that sepsis is the chief cause. Every variety of lubricant that has ever been known has been used by ardent advocates to prevent adhesions, and condemned even more ardently by others who have tried them. Some have used prepared membranes with good results, while others equally prominent get no results. Some have no adhesions by using cathartics; others get equally good results by absolute rest treatment. By carefully considering all the literature which has been written, along with my own limited personal observations, I think we may safely reach the following negative deductions:

1. The choice between the wet and dry pad is not vital, if equal care is used in their use.
2. Oils and all lubricants are worse than useless in the prevention of adhesions.
3. Specially prepared membranes and other foreign bodies have not proved equal to the claims of their advocates.
4. Cathartics following operation probably do more harm than good as a rule, although at times they may be of benefit.

On the other hand, we are safe in the following positive deductions:

1. Thorough asepsis.
2. As little handling as possible.
3. Avoidance of all traumatism and exposure to the air, as far as can be.

All of these agencies and precautions undoubtedly have an influence, but of greater importance is the spe-

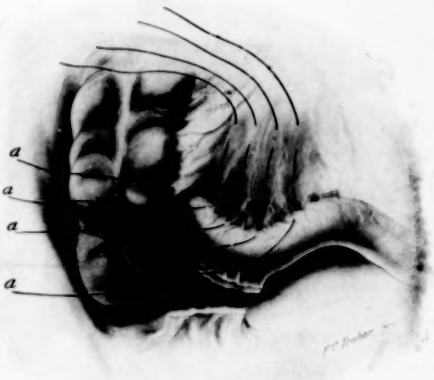


Fig. 2.—Method of applying purse-string sutures for the purpose of shortening the mesentery of the ileum to prevent reformation of Lane's bands; (a), purse-string sutures.

cial resisting power of the patient. Adhesions forming under given circumstances probably are in exact ratio to the patient's power of resistence to sepsis.

Adhesions ordinarily do no harm as far as the patient knows. Adhesions do harm only when they impair the motility of a normally movable organ, and prevent it from performing its normal function. Adhesions which tend to disturb the normal relation between a freely

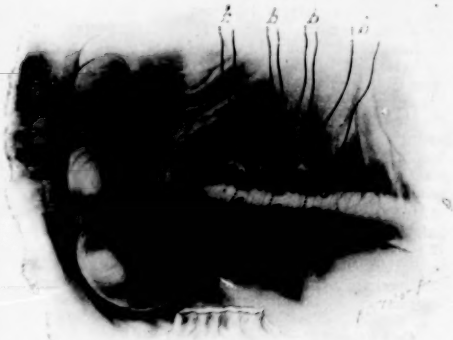


Fig. 3.—Purse-string sutures (*a*) tied; reinforcement sutures (*b*) placed between.

movable and a relatively fixed portion of the gastro-intestinal tract often produce a partial obstruction at these points. Therefore, troublesome adhesions often form in the neighborhood of the pylorus and gall-bladder, and in the neighborhood of the iliocecal valve and near the ligament of Treitz after gastro-enterostomy. Troublesome adhesions often form between the small intestines and the pelvic organs, which are located in a deep cavity, and which have a direct communication with outside infection. Adhesions to the pelvic organs, or a low abdominal wound, in cases in which extreme gastroptosis already exists, are of the most troublesome variety. Troublesome adhesions resulting from gall-bladder diseases, or an operation for gall-stones, hold the stomach in such a position that it cannot empty itself properly. On the other hand, adhesions which do not prevent the free passage of gastro-intestinal contents do no harm and are not noticed, as is shown by the fact that gastropexy, as performed by Rovsing, gives no evil symptoms. Any portion of the movable part of the intestinal tract may be sewed for any distance to the abdominal wall without giving symptoms.

The methods of treating troublesome adhesions, which seem to be based on sound principles, are as follows:

1. Cover all denuded areas with adjacent peritoneum as far as possible, either to prevent or cure adhesions. This may be done (*a*) by simply bringing peritoneal edges of denuded areas together; (*b*) by rolling the intestine partially in its own mesentery; (*c*) by splitting the mesentery into its two leaves and bringing one leaf up over the denuded surface of the intestine, as recommended by Richardson.

2. If a sufficient quantity of adjacent peritoneum is not available, a part of the omentum or mesentery may be inserted between the two organs and fastened by sutures. This method is applicable, (*a*) in the treatment of troublesome adhesions in the neighborhood of the pylorus and gall-bladder by bringing up the right-hand edge of the great omentum and suturing it to the lesser omentum, thus permanently separating the liver and gall-bladder from the duodenum by a layer of fat (Fig. 1); (*b*) in the treatment of adhesions or bands in the neighborhood of the ligament of Treitz, following posterior gastro-enterostomy, by first cutting the adhesions and then folding the peritoneum under the colon in such a way as to cover the site of the operation and to extend an inch or two down the jejunum, covering it; (*c*) in the treatment of troublesome pelvic adhesions, by suturing the sigmoid and its mesentery in such a manner as to wall off the pelvis, as recommended by Summers.

3. If peritoneum and fat are not conveniently available, the next step is to hold the organ away from the point of attachment, after the adhesions have been cut, by shortening its normal supports, or by suturing the organ or its supports to some other peritoneal surface in such a way as to assure proper function to the organs involved. This is applicable (*a*), in the treatment of adhesions or bands in the neighborhood of the iliocecal valve, as shown in Figures 2 and 3, in which, after the adhesions are cut, the mesentery of the ileum has been shortened so as to make it impossible for the former position to be reoccupied; this is made more easily effectual by putting patient on left side with foot of bed elevated 15 inches; (*b*), in the treatment of severe adhesions in the gall-bladder region, due either to gall-bladder disease or operative woand in the neighborhood, in which the stomach is distorted (Fig. 4);

Fig. 4.—Stomach held down and distorted by postoperative or other adhesions thus preventing proper emptying. This condition may be relieved by the Beyea operation, as shown in Figure 6, or interposition of the greater omentum (Fig. 1).

in this case, after the adhesions are cut, the gastro-hepatic omentum is plicated and shortened enough to hold the stomach away from its original point of attach-

V. 61
1913

ment (Fig. 6); (*c*), in cases of ptosis which existed prior to an inflammatory process, by which process the omentum has been firmly fastened to the pelvic organs or to an operative wound in the lower abdomen, in such a way as permanently to fix the stomach and transverse colon low down in the pelvis, and thus prevent their proper emptying (Fig. 5). In these cases the greater omentum is sutured to the abdominal wall midway between the umbilicus and ensiform cartilage, and the upper abdomen expanded, thus curing the ptosis as well as the evil effects of the adhesions.

4. In cases of excessive adhesions in the pelvis or other parts of the abdomen, in which a loop of intestine goes into a mass of adhesions and emerges, leaving plenty of clear intestine above and below, by far the best plan is to leave the adhesion alone and short-circuit by making a lateral anastomosis between the two limbs, as shown in Figures 7 and 8, which operations I have done repeatedly,

Fig. 5.—Midline ptosis made permanent by adhesion of the greater omentum to the lower abdominal wall or pelvic organs following inflammatory condition or surgical operation in patient who was previously afflicted with ptosis.

when the adhesions had gone to the point of producing intestinal obstruction. I may state that all of these patients have remained in perfect health, although the adhesions were permitted to remain without disturbance.

5. In addition to the foregoing methods, I now submit a fifth method of treating adhesions in well-marked adhesion-forming patients, in whom adhesions recur after operation, in increasing quantity. It is the insertion of a protected gauze pack. For the past ten years I have used a gauze pack in certain septic conditions, with a great deal of satisfaction. In my early cases I used the gauze wicks without protection, which had the disadvantage of sticking to the loops of intestine and often paving the way for subsequent hernia, for I found that in a little over 25 per cent. of cases thus drained developed hernia later. During the past six years I have protected the gauze pack by several layers of rubber tissue, and by so doing I find in examining my records that the hernias have been reduced to a little more than 5 per cent. This drainage has been used in cases of acute

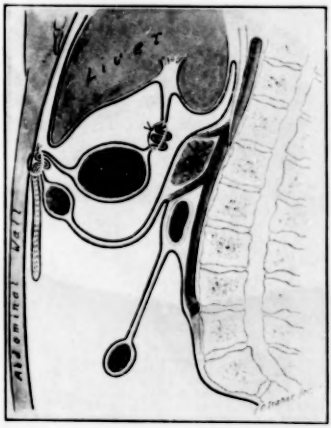


Fig. 6.—Lesser omentum shortened (Beyea). Greater omentum sutured to abdominal wall (see *Surgery, Gynecology and Obstetrics*, October, 1912).

sepsis, involving an area which could not be removed. I have used this pack during the past ten years in more than two hundred cases. In cases in which it has been necessary to open the abdomen for some other reason afterward, I have been particularly struck with the fact that adhesions are absent to a remarkable degree, and I

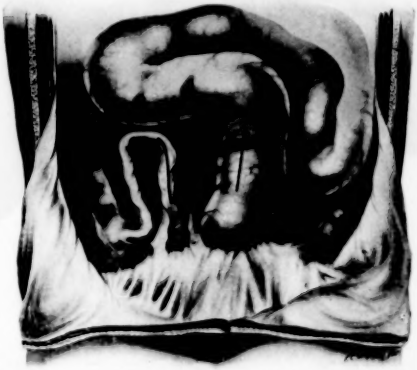


Fig. 7.—Relief of complete obstruction, due to extensive pelvic adhesions, by short-circuiting.

believe I am safe in saying that the adhesions are less than in the average clean case in which the abdomen is closed without drainage. After observing this absence of adhesions following the use of the quarantine pack, I decided

to try it for cases of extensive adhesions, in which the patient had been repeatedly operated on. Every surgeon knows these cases, and knows how he opens the abdomen, dissects adhesions sometimes for hours, possibly opens the intestine several times, closes the intestinal wounds and closes the patient with fear and trembling, expecting

Fig. 8.—Relief, by short-circuiting, of complete obstruction due to adhesion of intestines around a mesenteric stone which weighed a little more than 2 ounces. Note Meckel's diverticulum.

sepsis to follow. Sepsis does not follow; the patient recovers temporarily, but soon begins to show evidences of the reformation of troublesome adhesions. He finally opens and repeats his dissection with the same results. In this class of cases the protected gauze pack does its best work. It is placed as follows:

TECHNIC OF GAUZE PACKS

All the intestines must be temporarily packed far away from the infected or denuded area or organ. Gauze wicks the size of a finger should be laid straight, side by side, reaching entirely across the abdomen and coming out through the drain

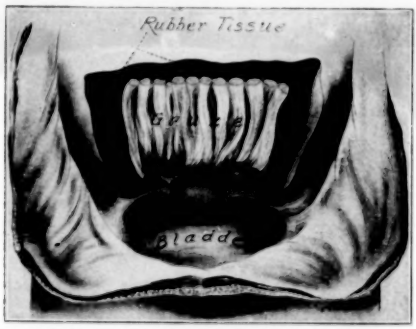


Fig. 9.—Gauze wicks protected by rubber tissue placed in pelvis. Note that an infected tube has been split and allowed to come in contact with the drain. This procedure is not advisable in gonorrheal pus tubes.

age opening. Four or five layers of gutta-percha tissue are then placed above the gauze and allowed to come out through the opening also. The intestines are now allowed to come down against the rubber tissue (Fig. 9). The omentum is drawn down, and if long enough is interposed between the rubber tissue and intestines (Figs. 10 and 11). The pack is brought out at the lower angle of the wound, and the upper part of the wound closed snugly around it, with combined layer and through sutures.

In my experience it has been better to attempt to remove half or all of the gauze wicks about the sixth or seventh day after the drain is placed. If the gauze is removed before the end of six days, it is usually done with difficulty. If it is allowed to remain more than ten days it again attaches itself and is removed with difficulty, so that at the end of about six days it will usually be found that the wicks are pulled out more easily than they are either sooner or later. At times I remove all of the gauze at this date, and at other times leave about one-third of it and take it out about three days later. I rarely remove the rubber tissue earlier than ten days or later than fourteen days. At this time I remove all of the rubber tissue and slip in a small soft rubber tube, tapered at the end, which prevents the abdomen from closing over the cavity before it is healed. This is allowed to remain a week or ten days, until the bottom of the opening has time to close in around the tube and make a straight sinus. If this last tube is not allowed to remain long enough, the wound heals on the outside and leaves a large unhealed cavity on the inside, which makes the wound very much slower in closing.

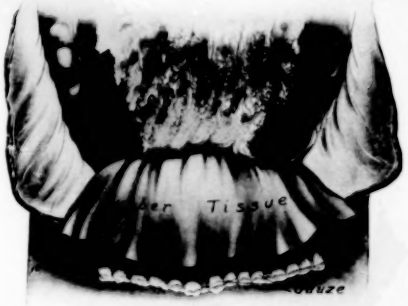


Fig. 10.—Protected gauze pack has been placed and omentum interposed.

About five weeks is the average time for a wound thus treated to heal entirely. I usually keep the patients in bed for about four weeks.

No procedure in all of my abdominal work has given more complete satisfaction. In no case has it ever been necessary to reoperate for adhesions after the use of the protected pack. The pack seems to serve two purposes. First, it rapidly drains off serum, and with it the adhesion-forming plastic material, which seems to be excessive in these adhesion-forming patients, so that there is not much material to form adhesions. Second, it creates double lines of granulation, which apparently are incapable of uniting with each other firmly.

789 Glisan Street.

ABSTRACT OF DISCUSSION

Dr. J. H. Jacobson, Toledo, O.: Dr. Coffey's theory seems to me in direct contradiction to our ideas of the formation of abdominal adhesions. The work done by Dudley and Sargent is the best on this subject. They point out that adhesions are formed from plastic exudate thrown out on the intestinal walls about the site of the operation. They maintain that with proper drainage and removal of the serum and exudate adhesions are prevented. The other principle is that the introduction of all foreign substances or anything which will

V. 61
1913

destroy the endothelium of the peritoneum will produce adhesions. The conclusions of Dr. Coffey seem to me in contradiction to these principles.

Can we account for the formation of adhesions in these cases? Will a timely operation, even in the presence of an enormous amount of infection, with properly placed drains lessen the tendency to adhesions? We can prevent the further destruction of the endothelial covering of the peritoneum and prevent adhesions? This is a most important principle and one which we should work on in doing abdominal surgery. It is important to do away with dry packs and to use the moist. In the gall-bladder operation, with the use of the Mayo-Robson position the abdomen is closed before the patient is put back in the horizontal position. We have noticed adhesion of the liver to the parietal peritoneum and part of the diaphragm. We have separated the adhesions and used the omentum. When it is necessary to use a substance to prevent adhesions in the abdominal cavity, Dr. Coffey has shown that he prefers that method to the use of foreign materials. I also wish to mention the danger of adhesions from the contact of the intestines with the iodin. Because of this, the skin should be covered with gauze so that the intestines will not come into contact with the skin. I am much interested in this quarantine pack because we are introducing into the abdominal cavity foreign material, and yet, apparently, with the draining off of the serum we prevent the

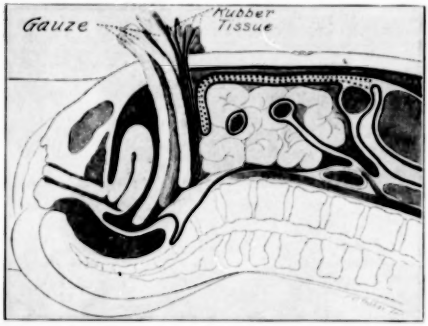


Fig. 11.—Scheme of protected gauze pack as applied to the pelvis for the relief of extensive adhesions.

reformation of adhesions. This is contrary to the usual view of the formation of adhesions. We must wait and hope that it will prove to be as Dr. Coffey has told us to-day.

DR. JOHN B. DEAVER, Philadelphia: I have saved many lives by the procedure described by Dr. Coffey. I have had thirteen cases following appendicitis. All the patients were operated on and all recovered, and I did not interfere with the adhesions at all. That is masterly inactivity, conservative surgery. More radical surgery would be likely to result in disaster. In place of the quarantine pack, we formerly used rubber tissue. The principle is the same. There is no question at all that the convalescence is less interrupted and more permanent. I was also glad to hear Dr. Coffey say that he did not take the gauze out until from the sixth to the eight day. I tell my house-doctors to leave it in until it practically comes out.

DR. RUFUS B. HALL, Cincinnati: This gauze protection in pus cases is a life-saving operation. Do not be afraid of adhesions if you use gauze. I have used this method for twenty years. I did not at first protect with rubber tissue, but find it a distinct advantage. I learned early in my work not to remove the gauze too soon. I handle it as Dr. Deaver does and wait until it becomes loose; in from six to seven days it can be removed easily. The hernia, if it occurs, can be treated afterward without trouble. I tell my patients that I expect them to have a hernia, but that it can be repaired. By this method we can save lives that would otherwise be lost.

DR. C. E. CANTRELL, Greenville, Tex.: Do not break up these adhesions, if you can secure a loop of intestine for anastomosis, because otherwise some of the bowel will be denuded of its peritoneal covering. I have worked for hours trying to cover raw surfaces with peritoneum. I have in mind a case in which we operated a fourth time. We did not disturb the adhesions, but did an anastomosis and the man recovered.

DR. HENRY BOXER, Birmingham, Ala.: The principal thing in abdominal surgery in the prevention of adhesions is to cover all raw surfaces, no matter how much time it takes, unless the patient's condition is bad and we have to finish the operation in a hurry. In pelvic surgery, when adhesions of the intestines are extensive, Dr. Coffey has mentioned that he does not disturb the adhesions, but makes an end-to-end anastomosis. If there is no obstruction to the intestines, the best plan is to leave the adhesions alone rather than to disturb them by making an end-to-end anastomosis, which sometimes proves disastrous to the patient.

DR. R. C. COFFEY, Portland, Ore.: The man who knows nothing but the drainage-tube and can use nothing else evidently does not cover the fundamental principles of drainage. The man who can use nothing but gauze and does not know when and when not to use gauze is not familiar with the fundamental principles. I think that the most exhaustive study I ever made on anything was on the matter of drainage in following the work of Clark and Yeats. They both reached the conclusion that drainage was a bad thing. They said it would not drain pus and blood, that it created a great deal of serum and was liable to infection. I admit that it forms serum in exact proportion to the amount of peritoneum that is touched by the foreign body, but the serum is brought there to form adhesions, and if we deliver it slowly by a small wick of gauze we shall produce more adhesions than if we had not touched it. On the other hand, if we drain the serum off as rapidly as it is formed we rob this area of all its adhesion-forming substance. That serum, however, is brought to the surface only in proportion to the amount of gauze that comes out through the wound. Clark used a pack of gauze folded on itself like the folds of a fan. He found large amounts of serum and adhesions after this method of drainage because it produced a large amount of serum and delivered only a small amount to the surface. If we put in enough to deliver the serum as fast as it forms, we have nothing with which to form adhesions. This is not true in the treatment of sepsis. There it is possible to operate in the most acute case with immunity. I did not have a fatality in six years when I used the method in acute pyosalpinx in which there was pus. If we deliver this serum to the surface as fast as it is formed, we keep the intestines back and have no adhesions. We do not find out by theory, but by having to reoperate in cases in which we have drained in this way. In these cases we find almost complete absence of adhesions, while, in cases drained by a simple tube or a small piece of gauze, adhesions are numerous. This, therefore, is the principle we must deal with.

Health Ordinances with Inadequate Appropriations.—This disposition on the part of our lawmakers to demand brick of the medical profession without having furnished any straw with which to make it, is almost too ridiculous for judicious discussion. The city of Fort Worth, for instance, after many years and in answer to the earnest demand of the women of the city, agreed to establish a board of health, consisting of five members, two of whom must be physicians, with advisory authority only and to serve without pay. At the same time, the commission agreed to pay a lawyer $1,000 to prosecute a case of alleged graft, and to extend to him actual authority. The difference is that there were no fanatics to rise up in their indignation and charge somebody with something in opposing the proposition. Doubtless similar conditions exist in other cities, and it is to be hoped that in the course of time public opinion will bring about a wholesome change of policy in this respect.—Editorial *Texas State Jour. Med.*

A COMPARISON OCULAR*

DANIEL J. HEALY, M.D.
LEXINGTON, KY.

While working on certain changes in the tissues of the guinea-pig, it proved of great advantage, in observing the finer changes, to use two microscopes side by side, one showing the normal tissues and the one the abnormal

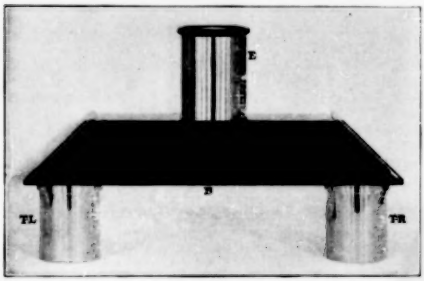


Fig. 1.—The comparison ocular. The ocular consists of a set of reflecting prisms within the box *B*, which carries the eyepiece *E*, in the middle, and a short tube at each end, marked *T-L* and *T-R*. The tube *T-L* fits snugly into the body tube of the microscope stand to the left, while the other tube, which is of smaller diameter, moves freely within the body tube of the stand to the right.

tissues. On Jan. 29, 1912, I communicated with Mr. Edward Bausch, suggesting that a microscope be so equipped with two objectives, "that on looking through the eyepiece one would see half of the field of each objective." The Bausch and Lomb Optical Company

Fig. 3.—Cotton fibers (left), and woolen fibers (right).

kindly worked out the idea, using, however, two microscopes and one comparison ocular, which method is more practical and less expensive than that of two objectives on one microscope.

The purpose of the comparison ocular is to permit the examination, side by side in the same field of the microscope, of two specimens, as, for example, a normal tissue and a pathologic tissue, the field being divided into two halves in which the objects on the stage are imaged, the images being separated by a straight line.

Two identical microscopes are placed side by side (Fig. 2), the draw tubes are removed, and the collars of the body tubes replaced; the comparison ocular is now attached by fitting the short tube *TL* snugly into the body tube of the instrument to the left, at the same time slipping the loosely fitting tube *TR* into the body tube of the instrument to the right. To avoid binding, the tube of the instrument to the right must be nurled down until the objective nearly touches the slide. Then the

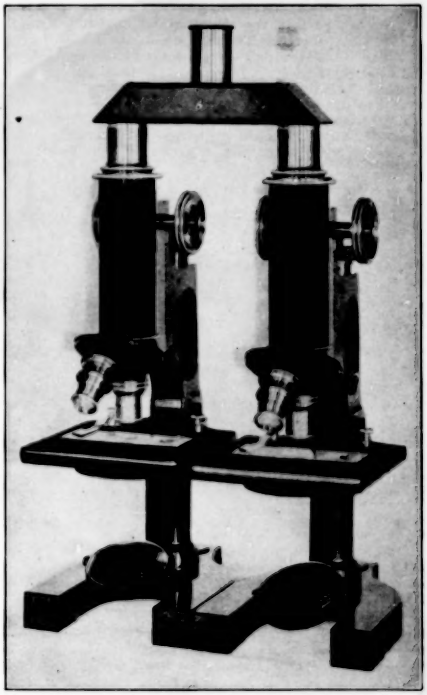


Fig. 2.—The comparison ocular and two microscopes in position ready for use.

left instrument, which carries the ocular, is focused, after which the right instrument is focused with an upward motion.

The following illustrations are photomicrographs taken through the comparison ocular; direct diffuse daylight, from a north window, was used to illuminate the field; 16 mm. lenses were used, which with the comparison ocular gave a magnification of seventy-five diameters; the exposure was forty seconds.

The comparison ocular has been in use in this laboratory since May, 1912, and has proved valuable. Recent articles describe a comparison microscope devised in Ger-

* From the laboratory of the Kentucky Agricultural Experiment Station.

V. 61
1913

Fig. 4.—Crystals of morphin periodid (left), and cocain permanganate (right).

Fig. 5.—Cross-section of timothy (left), and Hypericum (right).

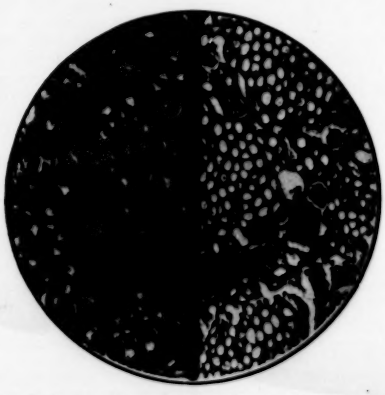


Fig. 6.—Sections of normal kidney of guinea-pig (left), and of acute parenchymatous nephritis of guinea-pig (right).

many by Dr. W. Thörner.[1] As will be observed, we were using the comparison ocular six months before Dr. Thörner's article was published. The comparison ocular has the advantage in that it does not require a specially constructed microscope like the German instrument, thus being much less expensive and quite satisfactory in operation.

MYOTONIA ATROPHICA*

FOSTER KENNEDY, M.D., F.R.S. (EDIN.)
Chief of the Neurological Clinic and Instructor in Neurology, Cornell University Medical College
NEW YORK

The rarity of this curious muscular degeneration is the excuse for the report of a single case. Myotonia congenita, so-called Thomsen's disease, is not very uncommon, but the combination of increased tonus in some muscles with a primary flaccid palsy in others in remarkably constant distribution is so rare that but four cases have been reported[2] as yet in the medical literature of this country.

The disease is apparently peculiar to persons in middle life, is of a very slowly progressive character, and, in rather more than half the number of cases, is of familial type. The symptom-complex is so constant and so characteristic that, when once understood, recognition of subsequent cases becomes simple.

REPORT OF CASE

History.—G. F., an unmarried Swiss, aged 46, was admitted March 27, 1913, to the Cornell Division of Bellevue Hospital, New York, and was placed under the care of Dr. Gilman Thompson.[3] The patient's parents had both died in old age. Three brothers and three sisters were in good health, but one sister, a resident of the United States, had arthritis deformans. There was no neuropathic family history. Neither the patient nor his sister knew of any near or collateral relative affected in any way similarly to the case under consideration. For fourteen years he had been employed as a farmer in New England. His habits were regular and his general health good. His consumption of alcohol was limited to two or three glasses of beer a day. He denied having had any venereal disease and said that his previous health had always been good.

In 1893 his left cornea was injured by a spark which fell on it from a passing engine. In 1887 his hands and feet are said to have been frost-bitten. In November, 1911, after hard work during a heavy harvest season, he began to have cramp-like pain in the lumbar region. These pains were at first intermittent and rare, but later became more frequent, so that at the time of examination he constantly complained of their presence. He could remember no injury that would account for this condition, which became more severe when he worked in a bent posture. He strenuously denied having any difficulties in his gait or in the use of his hands. There were no sphincter troubles. He had not worked for a year but had never been confined to bed.

Examination.—The patient's facial appearance was quite strikingly characteristic of the disease, and was the result of an incomplete ptosis of both eyelids, with marked hollowing of the temporal fossae and flattening of the masseteric region on each side (See illustration). The orbicular muscles were very weak and there was no movement in the temporal or masseter muscles. The left pupil was hidden by a corneal scar, the result of the injury previously spoken of. The reaction of the right pupil was normal. A well-marked and advanced

1. Literary Digest, Nov. 16, 1912; Scientific American, Feb. 15, 1913.

* From the Cornell Division of the Bellevue Hospital.

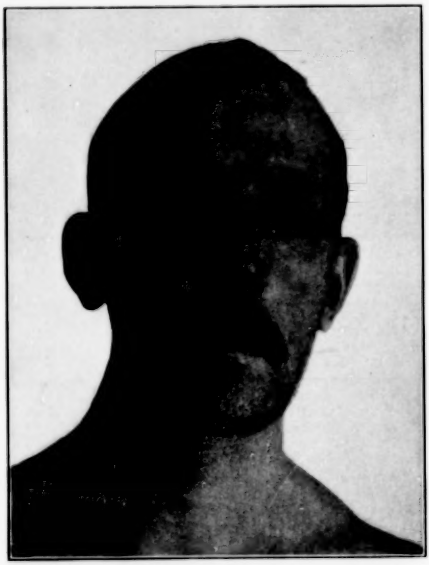
2. Hunt, J. R.; Jour. Nerv. and Ment. Dis., 1908, lix, 269, Kennedy, Foster and Oberndorf, C. P.: THE JOURNAL A. M. A., 1911, lvii, 1117.

3. Dr. Thompson kindly asked me to see this case, and by his courtesy I am permitted to use these notes.

cataract was present on each side; that on the left side might have been thought traumatic in origin had not that of the right lens been so obviously otherwise. A slight bilateral divergent strabismus was evidently the result of defective vision.

His articulation of both English and French was slurred and difficult to follow, though no structural defect was found which could account for this symptom.

The sternomastoid muscles were completely atrophic and there was some wasting in the extensor muscles of the forearms. The position of rest of both hands was one of slight flexion, the thumbs being slightly adducted. All movements were present, but it was found that after making a strong, grasping movement with either hand he was unable quickly to extend the fingers again, the muscles involved being apparently in a state of cramp. If the grasping movements were frequently and quickly repeated this cramp became less and less noticeable until, after perhaps half a dozen efforts it would completely disappear. This phenomenon was not present



Characteristic facial appearance in myotonia. Incomplete ptosis of both eyelids, marked hollowing of the temporal fossae and flattened masseteric region.

in any other muscle or group of muscles. The abdominal muscles and those of the back and chest were normal. The condition of the spine was normal. The vastus internus and vastus externus of the right thigh were diminished in bulk, though no change was found in the intervening rectus femoris muscle. The knee-jerk on the right side was difficult to obtain. There was a reduction in response directly proportional to the reduction of the muscular mechanism involved. There was almost complete atrophy of the anterior tibial and peroneal muscles with complete bilateral foot-drop as a result. The ankle-jerks and plantar reflexes were absent. The abdominal and arm reflexes were normal.

The gait was of the steppage type peculiar to paralysis of the dorsi-flexors of the feet. There was no sensory change. No reaction to galvanism or faradism was present in the orbicular, temporal, masseter or sternomastoid muscles. There was almost complete loss in the anterior tibial groups of both sides. In the muscles of the forearms and in the intrinsic hand muscles reactions were strong but enormously prolonged.

There were no pathologic changes in either the blood or the urine. The Wassermann test of the blood-serum and the cerebrospinal fluid was negative.

CONCLUSION

The combination of premature bilateral cataract with atrophy of the temporal, orbicular, masseter, sternomastoid, vasti and anterior tibial muscles, together with a sharply contrasted myotonus in the hands, occurs too frequently to be ignored and most probably points to a deficient hereditary endowment as the approximate cause of the disease.

20 West Fiftieth Street.

POLYPOSIS GASTRICA (POLYADENOMA)*

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Although many instances of the presence of polyps in the gastro-intestinal tract are reported in the literature, they are not altogether common in the stomach. Reports of the existence in the stomach of a sufficient number to justify the term "gastric polyposis" are meager, indeed. In a search of the literature it has been rather surprising to see how lightly the subject of gastric polyps has been touched on in text-books on diseases of the stomach, as well as those on its pathologic anatomy. Indeed, the only text-books on diseases of the stomach which do more than mention the subject are those of Bouvert, Hemmeter and Deaver and Ashhurst.

Chosrojeff finds a dearth of information on benign tumors of the stomach in general, and attributes it to the fact that they present the picture of malignant disease and are thus overlooked. As a result of his investigation, Alfred Tilger in 3,500 necropsies reports but fourteen benign tumors of the stomach. In the Obruchow-Krankenhaus, in 7,500 necropsies, four cases of polyps of the stomach were found, or 0.053 per cent. In Russian hospitals he found the percentage to vary from 0.007 to 0.04 per cent. Versé collected reports of fifty-five cases of polyps of the digestive tract, in four of which the polyps were in the stomach. Ebstein, in 1864, found in 600 necropsies, fourteen cases of stomach polyps, and was able to collect reports of eight others from the earlier literature. Of these twenty-two cases, twelve were of solitary growths, and the others comprised one large polyp with several small ones. In only three cases did Ebstein feel justified in speaking of polyposis; these presented as many as 200 polyps which varied from the size of a pea to that of a bean.

Much of the literature on gastric polyposis has come to us from the French. As early as 1888, Menetrier wrote a very complete study of the subject, and his subdivision of *polyadenomes polypeux* and *polyadenomes en nappe* is still accepted. The earliest reports were made by Morgagni, Andral, Cruveilhier, Vulpian, Leudet, Cornil and Richard. Single polyps of the stomach have been reported by Lyman, Lange, Bennett, Skifossowsky, Hind, Chaput and others.

Wegele, in 1908, reported one case of polyadenoma, and in a search of the recent German and English literature was able to find the treatment of this subject only in the works of Collier, Hanser, Post and Galland.

* Read before the Sixteenth Annual Meeting of the American Gastro-Enterological Association, Washington, D. C., May 6, 1913.

V. 61
1913

In French and English literature, Menetrier, Brissard and Norman have each reported one case. Chosrojeff recently reported a case in which he removed six large polyps varying from the size of a pigeon's egg to that of a hen's egg, together with a large number of smaller ones from the size of a pea to that of a hazelnut. Bouvert, in his splendid treatise on the subject, states that he never encountered a case.

The etiology of polyadenoma, or gastric polyposis, is as obscure as is that of other growths. Chronic gastritis, however, is accepted by all as a factor in its development. Kaufmann in his text-book on pathologic anatomy states that they develop either from a basis of chronic hypertrophic gastritis, or independently. Menetrier likewise considers chronic gastritis as an important etiologic factor, though not in all cases. He maintains that the condition usually occurs in advanced age, that atheroma of the blood-vessels is always present, and that the changes occur in the mucosa as a result of the involvement of its nutrition. In all of the cases reported, except the one by Norman, in which the patient was 34, and one by Chosrojeff, in which the patient was 36, the patients were over 59 years of age. Sex apparently played no rôle.

Macroscopically, the polyps in previous reports were small, pedicled, varying in size from that of a lentil to that of a pea, gray or reddish, depending on the blood-supply, of a soft consistency and never adherent to each other. The polyps sometimes numbered several hundred and were all about the same size, as if they developed at the same time, and after reaching a certain size stopped growing. They may develop from any part of the stomach mucosa. Brissard thinks that they occur with greatest frequency in the large culdesac, while another writer thinks that they develop chiefly from the pepsin-producing glands. Menetrier recognizes two anatomic forms, according to whether the hypertrophy and hyperplasia involves the excretory or deeper part of the tubular glands. In the first type lobulation is more apparent and cysts more common, owing to obstruction of the excretory ducts by the connective tissue. If they develop in the deeper parts of the glands, the polyps have a more uniform appearance, and tubulation is less pronounced. A mixed type may also occur. The portion of mucous membrane of the stomach which is not involved in the polyp formation usually shows the macroscopic characteristics of a chronic gastritis. Enlarged lymph-nodes are often encountered.

Polyadenomes en nappe (Menetrier) is a very rare condition, only three authentic cases having been reported, one by Andral and two by Menetrier. In this condition, instead of the hypertrophy and hyperplasia being limited to a part, it involves equally the entire mucous membrane in an area, so that the membrane develops in large plaques and not as polyps. The involved area is usually from two to five times the normal thickness of the mucous membrane. The consistency is as soft as that of normal mucous membrane; the membrane develops in large folds, one pressing on another, and forms deep furrows. It develops parallel to the long axis of the stomach, and a sharp line of distinction is always present between the normal mucosa and the diseased area. The pylorus is never involved.

So far as my investigations go, there has been but one other case, besides the one here reported, in which a diagnosis was possible prior to operation or necropsy, namely, that of Chosrojeff.

History.—Mr. X. consulted me in December, 1904, on account of indigestion. There was nothing of importance in the family history. As a child he had always been in perfect health. He never drank to excess, but had smoked from ten to twelve cigars daily for a number of years. His wife had given birth to one living child, which died in infancy and was said to have been syphilitic, and had two miscarriages, two and four years after marriage. Twenty years previously the patient had an abrasion on the right hand, which persisted for three months, and was said to have been a primary syphilitic lesion; shortly after this a small sore appeared on the penis, which existed but a few days, and was pronounced a soft chancre. There were no secondary manifestations of lues.

In 1891 a cloudiness of the vision of the left eye suddenly developed which was attributed to grip. The oculist questioned the patient carefully with reference to syphilis. Prior to this periodical indigestion of a mild character had occurred for several years. The patient also experienced "nervous

Fig. 1.—Roentgenogram of the stomach, taken about fifteen minutes after the ingestion of an ounce and a half of bismuth in a pint of sour milk, with the patient in the standing posture.

attacks" in which he became greatly depressed. When he consulted me in December, 1904, he was complaining of indigestion, characterized by belching and peculiar pressure sensations which seemed to "radiate from the stomach upward through the chest and arms." These symptoms seemed to bear no relationship to the character of the food taken, but usually occurred one or two hours after meals, unaccompanied by pain or vomiting. At this time 26 pounds in weight had been lost within a period of four months. The appetite was not good. The bowels were regular, but not free, sometimes compelling the use of enemas. At times there was palpitation, which the patient attributed to "gas in the stomach." There was no dyspnea, edema or any nocturnal urination. From time to time dizziness was experienced on sudden change of position.

Fig. 2.—The stomach removed at necropsy showing the entire mucosa, with the exception of a small area near the cardiac orifice, literally covered with polyps; *a*, a large grape-like bunch of polyps, a portion of which had invaginated the pylorus.

Examination.—The patient was a man of medium height, of a florid complexion, weighing 178 pounds, still well nourished though showing evidence of loss of weight. The pupils reacted normally to light and accommodation. The patellar reflexes and the sensorium were normal. There was a low systolic murmur at the apex of the heart, not transmitted. There was no enlargement of the heart. The lungs were negative. The liver was palpable two fingers' breadth below the free margin of the ribs on deep inspiration and was of normal contour and consistency. There was no pain on pressure in the right iliac, right hypochondriac or epigastric region. At the diaphragmatic insertion were numerous small dilated vessels. There was no tumefaction, though the epigastrium bulged slightly and presented slight resistance to pressure. Inflation of the stomach revealed no enlargement or displacement. There were a few enlarged lymph-nodes in the left anterior cervical region and also in the groins. On the dorsum of the penis was a small non-indurated scar and a scar was also on the left hand, the result of the lesion previously mentioned. The urine was negative. Hemoglobin, 67 per cent.

After a test-breakfast removed Dec. 14, 1904, 1½ ounces of slightly acid contents were recovered, with free and combined hydrochloric acid entirely negative. Lactic acid was mildly positive. There was a slight increase in mucus. Microscopically, nothing was abnormal. Test-breakfasts taken Dec. 16, 18, 20 and 24, 1904, and Jan. 10, 13 and 24, 1905, constantly revealed normal motility with complete achylia gastrica and a slight increase of stomach mucus. The diagnosis of chronic, atrophic gastritis was entered at this time into the records.

Treatment and Course.—This was prior to the days of the Wassermann reaction, so in view of the history of the case and the presence of abnormal fundus findings as reported by the oculist, iodids were given, which were tolerated so badly that the patient soon discontinued them. He took an extended trip, and on his return home stated that he felt fairly comfortable. I did not see him again for a period of five years, during which time the general condition was such that he felt no need of consulting a physician.

The patient returned in February, 1909, complaining of pronounced gastric symptoms, characterized by intense pressure in the epigastrium from one-half to one hour after meals, followed by "gas pains," three or four hours later. He was often compelled to get up during the night and walk the floor until he could free himself of the gas accumulation.

Physical examination at this time revealed no particular variation from the previous examination, except, perhaps, that the general nutrition was much improved. There was, however, a marked change in the gastric contents, which still contained no hydrochloric acid and no pepsin, but abounded in large quantities of mucus. Many analyses were made between February and October, 1909, with practically the same findings. The mucus was much like finely divided, slightly coddled white of egg. It was practically impossible to lavage the stomach long enough to obtain wash-water free from mucus. Microscopically, there was an increase in yeast, though there was no branching. Almost invariably there were a few red corpuscles, many undigested and partially digested leukocytes, many long and short bacilli and at times traces of pepsin, varying from 14 per cent. to 40 per cent. (Hammerschlag). There was no food retention. Numerous examinations of the feces revealed no blood.

The patient obtained his greatest relief through lavage, which was given now at frequent intervals for several months. The quantity of mucus that could be obtained from the fasting stomach was simply amazing. Not infrequently the wash-water was tinged with blood toward the end of the process of lavage. This, naturally, was assumed to be due to the irritation of the diseased mucosa by the tube. In view of the

V. 61
1913

fact that the ocular conditions were gradually getting worse, and on the assumption that the gastritis might be of luetic origin, the patient was given mercury injections and iodalbin, which were very well tolerated.

During the latter part of 1909, while the stomach was being lavaged, a small polyp about the size of a pea was expressed through the tube. It was perfectly round, smooth and unaffected by digestion, and showed definitely where the pedicle had separated. A microscopic examination showed it to be a simple benign adenoma. This naturally led to the supposition that there might be other small polyps in the stomach.

In 1910 the patient complained frequently of vertigo and this was attributed to the eye condition. There were also occasional attacks of diarrhea. A blood examination at this time revealed hemoglobin, 80 per cent.; leukocytes, 21,800; erythrocytes, 6,192,000; polynuclears, 67 per cent., large mononuclears, 16 per cent.; lymphocytes, 12 per cent.; eosinophils, 5 per cent., and red cells normal in appearance.

Test-breakfasts examined from time to time in 1910 revealed perfect motility, immense quantities of mucus containing many leukocytes, a total absence of hydrochloric acid and a mild degree of peptogenic power.

In the summer of 1911, while up North fishing, the patient developed an edema of the extremities and a rather marked degree of dyspnea, due to a relative insufficiency of the mitral valve, the result of overexertion. The condition improved under rest and digitalis, and when I saw him again in August he had a rather marked systolic murmur and intermittent heart-action, with an accentuation of the second pulmonic sound.

March 5, 1912, while in a hotel rotunda, the patient was overcome by a feeling of faintness and vertigo and fell unconscious. Shortly after this he vomited large amounts of blood, much of which was clotted. Before he could be removed to the hospital he had a large, perfectly black bowel-movement. Those present at the time think that he vomited at least a quart of blood. As soon as possible the patient was taken to the hospital. Temperature, 98.4; respiration, 20; pulse 120. There was no further vomiting, but the stools contained very large quantities of changed blood.

On the first examination at the hospital there was visible peristalsis and a palpable resistance in the pyloric region, much resembling the consistency of liver. On the following day with the hand resting lightly over the pyloric region to see if the peristalsis could be palpated, one could feel periodically the stiffening of the pylorus, and this was immediately followed by most peculiar movements under the hand, which resembled the movements of the small parts of a fetus. By stethoscope the movements could be heard as a distant rumbling noise followed by a squirting sound, as of a mixture of fluid and gas. The patient stated that the sensation could be experienced by fixing the mind on it, and, without any suggestion on my part, he described it "as the opening and closing of a valve." In view of this peculiar phenomenon, together with the previous findings of a small polyp in the washings, I concluded that a pedicled polyp had invaginated the pylorus, extended through into the duodenum and that either through laceration or the separation of a portion of it hemorrhage had resulted. The stools were watched carefully, and within three days a portion ot a polyp about the size of a walnut was found, irregular in outline, with the surface partially digested. Sections were made which revealed the typical structure of a gastric polyp. A soft resistance could still be felt at the pylorus, but the peculiar movements described above became less apparent, though they remained more or less so throughout the early convalescence.

The treatment consisted in absolute rest, the application of ice-bags to the epigastrium, calcium chlorid by rectum, morphin hypodermically and fluids by rectum during the first forty-eight hours. Fluids were given by mouth on the third day in small quantities which were gradually increased until about the sixth day, when liberal amounts were taken.

Blood was apparent macroscopically for about ten days in the stools, but gradually disappeared, and within three weeks after admission to the hospital there were no chemical traces of blood to be found.

The patient complained more or less constantly of "gas in the stomach" and considerable distress, though of very little actual pain. The pulse remained around 90, until about the twelfth day, when it began to resume the normal. On the twenty-sixth day he sat up and was taking liberal quantities of soft food. At no time throughout his convalescence was there any evidence of food retention. There was no vomiting, no eructations, and in spite of the liberal quantities that were administered in an effort to build up the system as rapidly as possible, there was no stagnation.

March 31 his weight, which had usually been in the neighborhood of from 165 to 170, was 137½ pounds. Following the primary hemorrhage the hemoglobin was 35 per cent. A month later the hemoglobin ranged from 50 to 60 per cent., the erythrocytes 4,264,000. About this time the tertian type of plasmodium was found when a routine examination of the blood was made, and before treatment could exert sufficient influence, the temperature suddenly went up to 101, the patient had a severe chill, and the hemoglobin dropped to 40 per cent. Under quinin the plasmodia soon disappeared. This was during a month when we have no mosquitoes in St. Louis, and while there was no history of malarial infection, the plasmodia were evidently latent in the bone marrow and had probably been liberated as a result of the rapid activity brought about through the acute hemorrhage. By the early part of June the patient's condition was excellent. The hemoglobin was now 84 per cent., the erythrocyte count 6,488,000, and the blood-findings in general practically normal. The weight was now 158½ pounds, a gain of more than 20 pounds from the first weighing one month after admission to the hospital.

The fluoroscopic and roentgenographic examinations of the stomach revealed an almost total obliteration of the pars pylorica and the median portion of the fundus. The bismuth mass formed a shadow to the left of the vertebral column, showing a very irregular and indefinite outline. The bismuth in trickling through the interstices showed a very dim shadow of the right half of the stomach. The mottling of the bismuth shadow in this portion of the stomach suggested irregular masses in the stomach wall (Fig. 1). The length of time required for the stomach to empty itself was not determined, but there was apparently no retardation, as is evidenced by the bismuth shadow in the small intestines within fifteen minutes after the ingestion of the bismuth.

Though immediate operation following the hemorrhage was considered, the patient seemed such a poor risk and improved so rapidly on rest, diet and iron medication that it was decided to defer it as long as improvement continued. Early in June he felt quite himself again. On the basis of the previous literature and the palpatory findings following the patient's hemorrhage, it was thought probable that there was one large polyp attached near the pylorus and extending through it, and that there were probably a number of smaller ones grouped about the large one. It was hoped, therefore, that a gastrotomy could be done and the polyps removed individually or by a resection of the polyp-bearing area.

Operation and Result.—June 17 a median incision was made by Dr. Max W. Myer, a small amount of free fluid escaping. The liver presented itself, somewhat enlarged, but soft. Adhesions were found at the greater curvature about 3 inches from the pylorus, which when detached revealed an area of small, dilated vessels or varicosities on the peritoneal surface. There was some contracture at this point, which presented an hour-glass appearance. Palpation of the stomach revealed a large, soft, putty-like tumor mass easily the size of a man's fist, occupying the median portion of the stomach lumen. Further palpation revealed similar smaller masses filling more or less the lumen of the stomach up to the cardia. Only a small portion of the pyloric end seemed free from involvement. Resection seemed out of the question. The stomach was opened over the large tumor mass by an incision parallel to the greater curvature, the pyloric and the cardiac ends of the stomach first being clamped with rubber-covered clamps. When the stomach was opened a reddish-brown papillomatous growth began to deliver itself, and a tumor larger than a man's fist with much the appearance of a bunch of grapes was gradually delivered, the pedicle of which corresponded to the area of

contracture noted on the greater curvature before the stomach was opened. The pedicle was half the length of the index-finger. In addition to this, the mucous membrane of the stomach from the cardia to within an inch of the pylorus was literally covered with small pedicled polypi, varying from the size of a large pea to that of a hazelnut. In view of the extensive involvement of the mucous membrane, a complete resection of the stomach was practically impossible. In the meantime, the patient's condition became very unsatisfactory. It was decided, therefore, to remove the large papillomatous growth only. After this was done, an attempt was made to close the incision in the stomach, first overwhipping the mucous membrane with catgut. The stomach was closed with several layers of chromic gut, buttonhole stitch and finally with a layer of silk, stitching the omentum to the suture line.

The patient's condition when he left the table was very bad indeed. Shortly after returning to bed he vomited a considerable amount of blood which included several small polypi. There was constant oozing of blood throughout the day, either from the incision or from the pedicles of the detached polypi, and in spite of every effort the patient died about twelve hours after the operation.

Necropsy.—This revealed little of interest outside of the stomach (Fig. 2), which, together with a portion of the duodenum and of the esophagus, was removed, and contained a large quantity of clotted blood. There were enlarged lymph-nodes in the gastrohepatic omentum and the mesentery. Intestinal polypi were not present.

I am greatly indebted to Dr. E. L. Opie for the following notes with the results of his macroscopic and microscopic findings.

Gross Examination.—Specimen consists of a portion of the stomach about 17 cm. long and 14 cm. wide. The greater part of the stomach wall is studded with polyp-like growths from 0.5 to 2 cm. in diameter. The mucous membrane between these masses is thrown into deep folds. There is an irregular mass about 12 by 6 cm. in diameter, resembling to some extent a bunch of grapes arising from the mucosa on the lesser curvature (?) about 5 cm. from the pyloric orifice. The nodules forming this mass are similar to those coming directly from the mucous membrane.

Microscopic Examination.—A section of a large polyp-like mass 1.5 cm. in diameter shows that it is attached to the underlying stomach wall by a pedicle 0.5 cm. across. The muscular coat of the stomach forms a regular layer below the polyp. The polyp consists of greatly hypertrophied mucous membrane, the muscularis mucosa and a loose connective-tissue core continuous with the submucosa and containing fairly large arteries and veins. The muscularis mucosa can be traced as a thick, doubtless hypertrophied layer at the base of the mucous membrane separating it from the core derived from the submucosa. On section the polyp exhibits three lobules, each of which contains an extension of the core, here consisting of connective tissue and muscularis mucosa. The hypertrophied mucous membrane which forms the main mass of the polyp consists of immensely hypertrophied glands, often with irregularly widely dilated lumina. Near the surface the dilatation and irregularity of the glands is greater than that deeper down. Here the gland consists of unusually high columnar cells with nuclei near the base. A very large proportion of the cells have the characters of goblet-cells and are obviously secreting mucus in large quantity into the dilated lumen of the gland. At the base of the mucosa in contact with the connective-tissue core, small glands resembling the pyloric glands of the stomach are abundant. The interstitial tissue between the glands contains cells in great number. These are in part lymphoid cells, in greater part plasma cells; eosinophils occur in immense number throughout the tissue, and polynuclear leukocytes in places are fairly abundant. The connective tissue forming the core of the polyp is the site of acute inflammation. Polynuclear leukocytes occur in large numbers and scattered among them in much smaller number are eosinophil cells.

Section through the stomach wall near the pylorus at a point where the mucous membrane is greatly thickened, although there is no definite polyp formation, shows hypertrophy and dilatation of the glands, inflammatory changes in the mucous membrane, hypertrophy of the muscularis mucosa, hemorrhage into the submucosa probably traumatic, and hypertrophy of the mucosa.

At the base of the mucosa are a number of widely dilated glands having the appearance of small cysts. The interstitial tissue of the mucosa contains an immense number of plasma cells, among which eosinophil cells are thickly scattered. Lymphoid and plasma-cells form collections of considerable size, particularly below the surface of the mucous membrane. The submucosa shows a mild inflammatory reaction containing scattered polynuclear leukocytes and eosinophil cells.

A section from the cardiac end of the stomach shows no hypertrophy of the mucous membrane. The glands appear to be displaced in part by accumulations of cells in the interstitial tissue which are most abundant immediately below the surface. Here lymphoid and plasma-cells are collected in immense number. Eosinophil cells are very abundant and form in places conspicuous collections. Parietal cells occur in scant number. Several cysts of small size occur and in some of these polynuclear leukocytes are fairly abundant.

The lesion corresponds with what is described as gastritis polyposa.

There is throughout the stomach both within the substance of the polyp and elsewhere evidence of chronic gastritis in marked degree. The relation of polyp formation to gastritis cannot be defined with certainty. On the one hand, the polyp may be regarded as a hypertrophy of the mucous membrane brought about by irritation associated with inflammation. On the other hand, the polyp may be regarded as a tumor or adenoma formed by proliferation of the glandular tissue. Localized hypertrophy of the mucous membrane will lead to the formation of the pedunculated polyp, the connective-tissue core being mechanically drawn into the nodule.

CONCLUSIONS

1. Though the diagnosis was made possible in this case through the presence of a small polyp in the wash-water during lavage, which also occurred in Chosrojeff's case, and the presence of a large polyp in the feces following the hemorrhage, it would seem that at least a probable diagnosis might be made in future cases without this conclusive finding.

2. The roentgenographic and fluoroscopic examinations in a case as extensive as this should always be helpful. I have not seen a similar picture in other conditions in my own experience, or in the records presented by others. The mottled appearance of the entire right half of the stomach, as though the bismuth were trickling through and around numerous masses, together with the irregular and indefinite outline of the stomach, could be produced only by such a condition as here described, or a most extensive malignant disease which would readily be differentiated by other means.

3. Achylia gastrica, also observed in Wegele's and Chosrojeff's cases, together with unusual mucus production (Chosrojeff), should always arouse suspicion. Ordinarly in achylia gastrica mucus is not encountered in the wash-water either in the large quantities here described or with the peculiar egg-white character, such as one would expect in the great multiplication of goblet-cells.

4. The repeated presence of fresh blood microscopically in gastric contents removed with care, or in the wash-water, is indicative of a redundant, vulnerable condition of the mucosa in which bits of tissue are readily removed by the tube. I have observed this more often in chronic gastritis than in circumscribed lesions such as ulcer or carcinoma. This should at least lead one to think of the possibility of polyposis. In this case, as in those of Wegele and of Chosrojeff, the clinical picture was that of a chronic catarrhal gastritis, with, perhaps,

V. 61
1913

fewer symptoms than are ordinarily manifested by gastritis patients.

5. In severe, acute, gastric hemorrhage in a patient with achylia gastrica, abnormal mucous production and normal or increased gastric motility, polyposis is more than probable.

6. Invagination of the pylorus by a polyp could hardly be mistaken for any other condition, after one has experienced the peculiar palpatory findings described in this case.

7. The etiology, of course, is very obscure, but it would seem probable that syphilitic gastritis was here the underlying cause.

Wall Building.

GROWTH AND EFFICIENCY OF HOSPITALS *

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My excuse for taking up any of your time is that I am appointed chairman of this section, and it seems to be one of the duties of the chairman to open the session with a few remarks. I can assure you that nothing that is of interest to general hospitals is foreign to my sympathy.

This section was formed, as most of you know, last year, and if its work shall prove to be of benefit to the general hospitals, it will grow and have its excuse for existing.

The general hospital is becoming an important factor in most communities, not only of this country, but also of the civilized world. It is almost startling to see what has been accomplished in the multiplication of these hospitals during the last few years.

The first hospitals in this country were the New York Hospital, the Pennsylvania Hospital and the Massachusetts General Hospital. It was nearly two centuries after the first white man landed on the shores of Massachusetts Bay that the first of these was built. The Massachusetts General Hospital was the third. Although the corporation was formed in 1811, the building was not ready to receive its first patient until 1820.

Few municipalities of any size now exist without their city hospitals. If there is not a city hospital, you will find a large private institution within its confines that is devoted to the public interest. I believe that it is not an exaggeration to say that there are twice as many hospitals in existence to-day as there were three years ago. If this is thought to be an exaggeration, you will be convinced to the contrary by talking with some of the firms that make equipment for general hospitals. You will find that all of these firms have been so loaded down with orders for equipment during the last three years that it has been impossible to keep pace with them. This being the condition, it is fortunate that the American Medical Association has formed a section that is devoted to this subject alone.

With this rapid growth, many of the hospitals are undoubtedly in a more or less crude condition, and meetings of this kind tend to perfect, refine and develop those that have been hastily constructed and perhaps carelessly organized into more healthy and commonsense institutions. No hospital can hope to grow in size or reputation unless it has a well-organized staff and keeps the interests of its patients well in the foreground.

Too much cannot be said, and too much emphasis cannot be placed, on treating the applicants for admission to the hospital in the most dignified, gentle and courteous manner. It should be part of the education which the hospital owes to the community to impress all who knock at its doors with its sympathy and kindness toward them and their maladies. I know that it is a hard thing when you cannot accept patients and relieve them, so to conduct yourself toward them that they realize that you regret your inability to be of service to them; but this is one of the vital points to be insisted on at the very outset when any hospital throws open its doors to the public.

The care of the patient may be prompt, may be scientific and may be most effective, but a hospital will grow slowly in reputation if its promptness and efficiency in treatment and diagnosis are not carried forward with an attitude of perfect courtesy toward its patients.

The three things that our hospitals should stand for are (1) the care of the patients, (2) scientific investigation and (3) the education of physicians, nurses, orderlies, every one within its walls, and through them the community at large, concerning the various maladies that are brought within its doors.

I can well remember, when I was a student visiting the outpatient departments in the city of Boston, being impressed with the helplessness of the physician to relieve the various patients that applied. At that time there was not so much thought taken, or so much effort made, to give advice that the patient was able to carry out. A patient who after a careful examination was found to have tuberculosis was given the prescription, emulsion of cod-liver oil and told to spend his winters in the South. The fact that a man was a day-laborer and had a large family dependent on him for support and not a dollar at his command for traveling to the South apparently did not have much effect on the physician. I have seen a patient without a cent in his pocket loaded down with prescriptions which would have cost him two or three dollars to have filled.

When one of these patients applies to-day at our outpatient departments, first, a careful physical examination is made and conditions are noted; then, there is an investigation as to his ability to apply the treatment. Someone visits his home to see if it is possible for the patient to sleep outdoors. If it is not, some society produces him a sleeping-porch. If he cannot pay for the medicines that are needed, the hospital, as a rule, furnishes these medicines free. If he needs a few months in a tuberculosis sanatorium to begin with, this is provided for, and a social worker interests the various charitable organizations to look out for the family during this sojourn. When he is returned to the community, the same careful investigation is followed up. He is gathered into a class of tuberculous patients who meet evenings to get their directions and encouragement from the physician. So that in a short time this family and the neighbors have all become educated in what it is proper to do, not only to help a tuberculous patient to recover, but also to prevent others in the neighborhood from contracting the disease. The sputum is carefully looked after and destroyed, and the whole family is enlightened as to the dangers of carelessness in the conducting of such a case.

This progress has been made largely, if not entirely, through the hands of the general hospital. I have men-

* Chairman's Address before the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

tioned tuberculosis because that is one of the diseases most frequently heard of; but in the average community other conditions are beginning and I may say are well under way, to be handled in the same enlightened manner.

I have mentioned scientific investigation as second in importance. Some of us feel that the people of Massachusetts may fairly be considered up to the average in intelligence. Yet a private hospital, conducted for the public welfare in one of its university towns, tried to start a small laboratory less than twenty years ago and the president of the hospital objected strongly to having such a department within its walls. This president was not an ignorant physician. I have read many of his papers decidedly to my advantage. He had stood well to the front in Massachusetts as one of the leaders, but he gave it out as his dictum that no money should be spent by that corporation in so useless a department, and that if it was insisted on he would resign.

Another hospital in the same state built its laboratory about sixteen years ago, and the chairman of its board of trustees reiterated to me many times that he had no sympathy with spending money for that purpose; that the money raised for the building of this laboratory would have come to the hospital anyway in the course of time for the actual treatment of the patients and doing good to the poor.

It is difficult for us to place ourselves back even this short period and realize the attitude of educated men toward scientific investigation in our hospitals. To-day these hospitals would be laughed at if they were not making honest effort for efficient work in these departments.

The laboratory in each department in many hospitals to-day is many times as large as the laboratory of the whole institution ten years ago, and it is because of this very scientific advancement in the treatment of a case that it becomes necessary not to lose sight of the gentle and sympathetic care of the patient.

There is no longer any fear of not having the support of the community in scientific investigation, provided the interests of the patient are well guarded and the attitude of the staff toward the patient is carefully looked after. We should try to see ourselves as others see us and then make such changes in our attitude and manner as common sense dictates.

I know of a layman who is a trustee of one of the large general hospitals in Massachusetts, who has become convinced that the place for scientific investigation in all medical and surgical matters is in the hospital and not in the medical school; that funds should be solicited for this purpose, and that the scientific work of the hospital should be as heavily endowed as the department for the treatment of patients. He feels that scientific investigation of medical and surgical matters would progress much faster, and in a much more economical manner, if it were divorced from the schools and entirely engrafted on the hospitals themselves. He believes, and supports his belief with plausible argument, which I believe has not been proved unsound, that the medical school should simply be used to teach what the scientific departments of hospitals have proved to be true.

Many a community has a hospital built for it or has money left to it for building a hospital and goes ahead in a blind sort of way to construct an institution which is larger than it needs without making any provision for running it. I recall now two instances of this.

A hospital without patients cannot educate; it cannot do good. If some of the money is used to construct smaller and more economical buildings, and the part which is left is used for opening and running the institution for a few years so that the community becomes impressed with its convenience and usefulness, this education and demonstration, so far as my experience goes, always brings philanthropists to the front who are glad to keep its doors open and furnish it with plenty of funds for legitimate expenses.

The rapid advance in the construction of hospitals makes certain that in no very distant time public opinion will demand that each community shall have sufficient beds in its hospitals to care for every sick person who needs to be within their walls.

The medical profession is gradually being much more carefully educated and much better fitted for the care of patients, but proportionately fewer persons are seeking this profession. I believe that this foreshadows, accompanies and makes for the advancement of the hospital, because the gathering of the sick into hospitals, not only places them where they can be better treated and given a better chance of recovery, thereby lowering the death-rate of the community, but it also conserves the energy of the physician and multiplies his usefulness. Thus far, the physicians may be quite sufficient to handle our sick in a progressive manner, provided the multiplication of the hospitals keeps pace with the needs of the community.

The German communities are much farther advanced in this particular than the American. Their insurance laws have brought about the support of sick laborers and servants in these very hospitals that are built by the cities. The hospitals in the suburbs of Berlin and other German municipalities may well stand as models for cities of much larger size in this country. Pennsylvania, perhaps, is the only state in our Union that has overdone this work.

Three years ago I recommended to the National Hospital Association that we should take steps to have an inspector appointed for general hospitals throughout this country. I still believe that the appointment of a state inspector, better, a national inspector, would be one of the best steps for progress that we could make. He might not please us, but he would help to standardize our hospitals to do away with many abuses that now exist.

I wish to repeat, the first duty of a hospital is the care of its patients. Everything that we do and all the policies that we adopt should be looked at from this point of view: Will this make for better care of our patients?

The care of a patient can never be first-class unless the attitude of the physicians in charge and of the superintendents toward the patient is both kind and sympathetic.

The hospital problem will not be solved until we have enough beds to care for every patient who can be benefited by coming to a hospital.

The hospital conserves the medical energy of the physician, at the same time rendering that energy more efficient. The time is not far distant when this phase of the matter is going gradually to drive all sickness in a community within the walls of a hospital.

The success or failure of these meetings will finally be tested by our success in bringing to a higher and higher standard the hospitals of this country.

697 Huntington Avenue.

V. 61
1913

THE SELECTION OF HOSPITAL EMPLOYEES UNDER CIVIL SERVICE RULES*

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INTRODUCTION

The underlying principle of the civil service regulations is that the best shall serve the state. The merit system, as it is called, strives to prevent the hospital superintendent from selecting his personal friends for positions in the hospital service and seeks to prevent him also from appointing those who are merely recommended to him by acquaintances. Under the merit system every citizen has a right to file an application whenever a vacancy occurs in a hospital, and the applicant who fulfils in the most satisfactory manner the requirements of the civil service rules is appointed. In this way the state obtains the service not merely of those who may be or may not be efficient, but also of the best available men and women.

THE COMPETITIVE CLASS

For purposes of administration employees are divided into several classes under the civil service. The most important class is the competitive class. In hospitals this class includes the incumbents of all positions in which substantial salaries are paid. It generally includes all physicians, trained nurses, supervising nurses, chief nurses, trained laboratory assistants, clerks, stenographers and the like. Applicants for positions in the competitive class are required to file a written application for examination. They are then summoned by the civil service commission for a written examination, which usually consists of two parts, one based on technical knowledge and one based on experience. The technical part requires the applicant to submit written answers to technical questions designed to test his possession of the knowledge required for the efficient performance of the duties of the position sought. Physicians are examined in their knowledge of medicine, nurses in their knowledge of nursing and stenographers in their knowledge of stenography and typewriting; their answers are rated on a competitive scale. The experience papers consist of statements prepared by the candidates regarding education and experience. These statements are carefully verified and rated on a competitive scale. Those candidates having the education and past experience best qualifying them, in the opinion of the examiner, for the position sought, receive the highest rating. A properly prepared and properly rated competitive examination in which both technical knowledge and the education and experience of the candidates are rated on a competitive scale undoubtedly results in the selection of the best available men and women for positions for which the hospitals pay a reasonable salary, and for which incumbents are required to have some education and some ability to express themselves in writing.

THE NON-COMPETITIVE CLASS

The hospitals in this country unfortunately pay many of their employees such small salaries that they are unable to secure men and women who are able and willing to take the examination. Competitive examinations presuppose that there are many applicants for the position. If the hospital must search for the employee it cannot expect the applicant to submit to a competitive examination. In cases of this kind there is no competition between employees for the position, but rather between the hospital and other prospective employers for the employee. In these cases the examination of the applicant is non-competitive. He is examined to determine whether or not he is competent to fulfil the duties of the position rather than to determine whether or not he is the most competent man for the position. Included in this non-competitive class are the domestics, orderlies and other minor employees in the hospital service. The non-competitive examination usually consists of an inquiry into the applicant's personal history, which must in each case be verified. In this connection hospitals seek to give employment with compensation to destitute convalescents, and they also endeavor to bar from their service worthless institutional rounders who fail to perform satisfactory service in any institution. This system of non-competitive examinations is a satisfactory means of preventing hospitals from employing, in minor positions, men and women who are obviously unfit for the positions which they seek.

THE LABOR CLASS

Positions, the incumbents of which may be efficient, even though illiterate, are in the labor class. This class is divided into two divisions, the subclass of laborers and the subclass of mechanics. Applicants for both subclasses are required to register and are called for examination in accordance with their priority of registration. Applicants in both subclasses are subjected to a physical examination. Mechanics are, in addition, frequently subjected to a qualifying practical test to determine their fitness to perform duties of their trade. It is presumed in the case of laborers that one man in good physical condition is as good a laborer as any other man in good physical condition, and in the case of mechanics that one competent mechanic is as good as another. There is, then, no competition among applicants in the labor class, laborers being subjected only to an examination of their physical condition and mechanics to a practical examination of their competency in their trade. In the hospital service coal-passers, drivers, elevator-operators, ordinary laborers and mechanics constitute the principal employees of this class. This system of selection is reasonably successful in securing for the hospital satisfactory employees of this kind.

THE EXEMPT CLASS

The exempt class consists of those hospital employees who are not subjected to civil service rules and regulations. This class includes all employees who receive no compensation for their services. Hospital interns and other physicians receiving no compensation are exempt from civil service regulations; but the best hospitals of the country subject all applicants for the position of intern to a rigid written competitive examination of technical knowledge and a careful inspection of personality.

Undergraduate nurses, who receive no compensation, or a nominal compensation, are similarly exempt from civil service regulations. These nurses must possess the preliminary educational qualifications required by statute and are selected by the superintendent of the training-school.

In contagious disease hospitals employees of all kinds are frequently exempt from the civil service rules because of the difficulty of procuring them. The super-

* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

intendent of the hospital and the superintendent of the training-school are likewise frequently exempt from civil service rule because their administrative duties and responsibilities are so intimately connected with the determination of the administrative policy of the institution that it is deemed best to permit the hospital authorities to select their principal administrative officers without being hampered by civil service rules.

SUGGESTED IMPROVEMENTS

Personality.—In the selection of hospital employees by competitive written examination, more attention should be paid to the experience of the candidate, without, however, reducing the severity and thoroughness of the technical examination. Although personality is an important element of the hospital employee's fitness, it cannot properly be made a part of the competitive civil service examination, because the introduction of this element into the examination would tend to introduce an element susceptible of grave abuse. The desired purpose can better be secured by the careful investigation of the experience of each applicant and by derating, and if necessary rejecting, those applicants who have an unsuccessful or an unsatisfactory past record, due in whole or in part to their personality.

Salaries.—If the personnel of our hospitals is to be improved better salaries must be paid to the non-professional men and women serving in them. If poor pay is coupled with undesirable service, it is certain that a satisfactory class of employees will not be obtained. The usual reply to this plea for higher salaries is that, since the hospital furnishes maintenance to its non-professional employees, these employees have little opportunity to spend their salaries, and would spend a larger salary, as many of them spend their present smaller salary, principally for purposes which would tend to decrease their efficiency. Although this argument fails to recognize the fact that larger salaries would be likely to attract a better class of men and women, it contains sufficient basis of truth to make us give consideration to the bonus plan, by means of which the employees receive the payment of an appreciable sum of money at the end of their term of service, rather than an increase of salary during their period of service. The payment of a bonus tends to serve as an inducement to permanency of service, and also serves to render less frequent the lapses from a proper mode of life now so frequently attendant on pay-day in public hospitals. The male orderlies are particularly unsatisfactory in this respect. It is believed that, if our hospitals would endeavor to select for the position of orderly men who have been trained by enlistment in the Hospital Corps of the United States Army, they would obtain orderlies who not only possess considerable skill, but who are also men of greater sobriety and readiness and willingness to obey the commands of their superior officers.

Mechanics.—In the labor class trade examinations should be more largely introduced as a test of fitness. The complex conditions of modern hospital administration render it more and more unlikely that all men in good physical condition are equally competent and fit to perform the mechanical work of the institution. Simple tests of mechanical skill in the case of almost every employee of the labor class would undoubtedly result in the selection of more competent employees of this class.

Nurses.—Under the present system undergraduate nurses are not subjected to civil service examinations at all, because it is presumed that the statutory regulations regarding the educational qualifications and the ability of a competent superintendent of a training-school will accomplish better results than the impersonal machinery of the civil service law. When the superintendent is a thoroughly competent administrative officer this system works reasonably well. As a layman, however, I venture the suggestion that the hospitals are not performing their full duty to the community when they train only the highly skilled nurses who are graduated at the present day. Nurses possessing the preliminary educational qualifications demanded by our statutes and the technical qualifications required of them before graduation from the training-school generally demand a fee for their services which the poor man is unable to pay, and which it is a hardship for the man of the middle class to pay. The hospitals should train two classes of attendants for the care of the sick: trained nurses, possessing all the qualifications possessed by trained nurses of the present day, and trained attendants, who lack some of the preliminary educational qualifications and some of the higher technical skill of the trained nurse. In this way they could furnish attendants who have been trained in a hospital and who could do much to improve the condition of those members of the community who, when sick, are unable to command the services of a trained nurse. During their course of training in the hospital, these attendants will be able to assist the trained nurses; and, after their graduation, they will be able to extend the benefit of trained attendance on the sick to those who are wholly unable, or unable without serious hardship, to employ and pay the regular trained nurse.

ABSTRACT OF DISCUSSION

DR. MOSES COLLINS, Denver: In many hospitals suitable and sufficient accommodations are not made for this middle class of our community, which is the largest class and which is the best class in every particular. These people most frequently say they are paupers or they cannot get accommodations. If hospital treatment is the proper thing, and we all believe that it is, some radical steps ought to be taken to meet the demands of people who require our services and need the hospitals and whose ability to pay ought to be met in accordance with their means. There must be some provision made for nurses and they must be the best. I do not agree that we should turn out half-educated nurses to take care of the best class of people in the community and that we should give the paupers the best we have.

DR. JOSEPH B. HOWLAND, Boston: Dr. Fuld mentioned the possibility of the bonus system. That never appealed to me. As an example of how it does not work, we recently had a strike of telephone operators in Boston, involving several thousand operators. The company fought the best they could, but as they had to give in, one of the things they suggested giving the operators was a bonus at the end of the year. I am glad to say that the operators rejected the offer. I think any attempt of employers to hold their employees over a period by offering a reward at the end of that time is wrong. I think the pay should be on the basis of what a man earns as he goes along. We all like to keep employees a year, two years and five years if we can, but I think that the bonus is not going to go far in solving our problem.

DR. MOSES COLLINS, Denver: I tried that method myself once in trying to hold interns and similar employees by agreeing to pay a lump sum at the end of a certain term of service. It did not prove satisfactory at all, and after talking with them and asking what they preferred, they said that they wanted their money every month and I have had no trouble since.

DR. JOHN N. E. BROWN, Detroit: Those of us who have had to deal with hospital employees know the great difficulty,

V. 61
1913

first of all, of securing the right sort; secondly, of obtaining an efficient amount of work from them, and thirdly, of keeping them in our employment. It appears to me that we would do well if we could induce our boards to agree to have some place or make some provision for those employees when they leave the service of the hospital. I think, too, that provisions should be made for the employment of married people in certain of the departments. That would tend toward steadiness and keep employees in the service. Besides, they should be well paid, well housed and well fed. It would be much better if we could have buildings especially for them in which we would not need to put more than one, or at most two, in a room. If we would seek to pay our employees well, make good provision for them while we have them and, at the end of their term of service, if possible, have a farm or some place where we could send them and maintain them for the rest of their days or give them an annuity it would tend to give the hospitals and the community at large a much better service.

DR. JOHN A. HORNSBY, Chicago: Some years ago the other large hospitals of Chicago complained to my board of directors that I was disorganizing conditions of employment for other hospitals because I was paying from three to five dollars a month more for wages than they were. My excuse was that I wanted the best and I could afford none other than the best and that in order to get them I would have to pay for them. I did that, but I did not seem to get any of the best of it and after a while I concluded that something else was wrong. So about that time we moved our nurses into a new home and concluded to fix up a building for the female help. I have never been able to do anything with employees except to pay them wages, and never have had the same wages in the same hospital for the same class of employment at any time. We have in our hospital now orderlies who are getting twenty-five dollars a month, and men who are doing precisely the same service who are getting fifty dollars a month. They are living in the house and under exactly the same conditions of employment, but in the one case a fifty dollar man has been there for years, knows the technic of the institution, and has proved honest and will do four times the work of the other man and do it four times better. I have never had any trouble satisfying the twenty-five dollar man that it was a fair deal and that he could get his fifty dollars too whenever he earned it. It seems to me that only by that sort of competition can we get hospital help. I have not had good luck with orderlies from the United States Army.

MISS HARRIET S. HARTRY, Minneapolis: We thought of a plan some four or five years ago of increasing the wage of an employee if he stayed one year; also giving that employee two weeks' vacation under pay. We have a houseman who has been with us two years, and this year we increased his salary five dollars and he remarked that he would never go away. We have a home for female employees outside of the hospital grounds.

DR. H. B. HOWARD, Boston: The civil service rule presupposes that there are a great many people who wish the positions; that is, that there is a waiting list. As a matter of fact, if you have civil service examinations when there is not a long waiting list, it will hamper you terribly in filling your positions.

A Thought for the Aged.—A cheering thought as we advance in life is that many illustrious examples show the possibility of conserving the intellectual and moral character to a great age. Isaac D'Israeli said that there has been no old age for many men of genius. Titian and Michael Angelo among artists, Voltaire and Littré, Goethe and von Ranke among literary men, Palmerston, Thiers, Beaconsfield and Gladstone among statesmen, Wilks and Paget in the medical profession, testify to this, and there is reason to believe that not only is advanced age consistent with mental activity of a high order, but that such mental activity tends to the preservation of the body and makes for happiness as well as for longevity. The advice of Cicero is sound, that "old men of all things should especially be careful not to languish out their days in unprofitable idleness."—Saundby: Old Age.

FACTORS INFLUENCING HOSPITAL COSTS*

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NEW YORK

The question which I am asked to discuss is this: "Why is it that, while hospitals are slowly but surely establishing certain standards of excellence and are attaching to these standards certain specific uses and pretty well-defined prices as to cost, and in this way are approaching uniformity in the cost of institutional maintenance, there is such a wide difference in the per diem cost as there is at present—one dollar per day in some hospitals and three dollars and more in others."

Before proceeding to discuss this question I think that we should have a clear understanding as to what the average cost per patient per day actually means, as printed in the annual reports of the hospitals. It is not computed after the methods which factories employ in ascertaining the cost of their products. The great difference between factory costs and hospital costs is that hospitals make no charge for investments in buildings and grounds or for depreciation of plant.

As the per capita costs published by hospitals represent merely the operating costs and do not take into consideration investment in grounds, buildings and equipment, or depreciation, it is apparent that, while these figures may be of use for comparative purposes, they do not represent the actual costs. If the omitted items were included it would be shown that the actual daily average cost is from 50 to 75 per cent. greater than the published one. The hospital which has a published cost of $2.60 per day would be found to have an actual cost of $4.50 a day. In other words, the average cost per patient per day as computed by hospitals is in reality only about 60 per cent. of the true cost.

The hospitals which I am asked to discuss, one with an operating cost of one dollar a day and the other of three dollars, represent the two extremes. The one dollar a day hospital represents the so-called city hospitals operated generally in connection with almshouses and restricted by parsimonious city governments to small annual appropriations. It goes without saying that in most of these hospitals the features characteristic of almshouses are likely to prevail. The hospital with the average cost of three dollars a day or more, represents a very restricted class of wealthy hospitals in which the practicing of economy is not so essential as it is with the average run of American hospitals. These two classes of hospitals are in no wise comparable and not being representative they may be omitted from this discussion.

Taking representative hospitals, we shall find that the hospitals operated by cities and also a fairly large percentage of those privately operated have costs per patient per day of from $1.25 to $2.00, while other hospitals, also mostly private ones, will have costs of from $2.00 to $2.75 a day. These are the two typical classes of hospitals. Both are well managed; both are doing good work, and to the superficial observer there is no apparent reason why it should require $2.50 a day to care for a patient in one and only $1.50 a day in the other.

Anyone visiting these institutions will be struck with the similarity of the buildings and equipment. Their furnishings are almost identical. There are the same

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* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

white iron beds, the same nickel-plated sterilizers, the same instrument cabinets, the same operating-tables, the same wheel stretchers and about the same kitchen, engine and laundry equipment. In other words, hospital equipment is pretty well standardized.

The initial cost of equipment is probably somewhat greater in the $2.50 a day hospital, but as equipment does not have to be renewed annually it does not figure appreciably in the operating cost.

What, then, are the factors which do influence the average cost per patient per day? I should enumerate them as follows: location of the institution, amount of scientific work done, number of employees and salaries paid, medical school connection, proportion of private room patients to ward patients, service rendered, including food, attendance, etc.

LOCATION

In think it will be conceded that the environment of an institution will to a considerable extent determine its expenses. The hospital located in a large city where standards are high will cost more to maintain than one in a small city, just as it costs the average family more to live in the big cities than it costs in the small cities or the country.

Life in great cities is complex. All sorts of complications tend to increase the costs. These affect the hospitals.

The standards maintained by the leading hospitals of a city determine to a large extent the standards of their sister institutions. The former set the pace. The others cannot afford to lag too far behind. The weaker ones must progress if they wish to maintain their reputations, and they must maintain their reputations in order to obtain support.

These things affect the municipal as well as the private hospitals. I think it will be found that municipal hospitals in large cities are likely to have a much higher per capita cost than do municipal hospitals in small cities. In fact, their cost is frequently higher than that of privately operated hospitals in small cities.

The per diem cost in Bellevue and its allied hospitals, Fordham, Harlem and Gouverneur, vary from $1.70 to $2.30 per patient per day.

Hospitals located in the South, other things being equal, should have lower costs than those located in the North. Ordinarily food and labor are cheaper in their locality and their expenditures for coal are much less. It costs the Winnipeg General Hospital, for example, over twenty-eight cents per patient per day for coal while the Charity Hospital of New Orleans spends less than three cents per patient per day for this item.

EMPLOYEES AND SALARIES

I think it will be found that the pay-rolls of hospitals are the most influential factor in determining the average cost per patient per day. The hospital with a small average cost will be found to be operating with few employees and perhaps paying them small wages. The hospital with the high per capita cost will be found to have a larger number of employees and to pay better wages.

In the institution with the low per capita cost the proportion of employees to patients is about two employees to three patients, whereas, in the institution with the large cost the proportion will be about three employees to two patients.

I know of institutions with 250 beds with pay-rolls of from $3,500 to $4,000 a month, and I know of other institutions with the same bed capacity with pay-rolls of from $10,000 to $12,000 per month. In other words, one class of hospital pays out in salaries and wages about fifty cents per patient per day, and the other about $1.20 per patient per day. These are representative well-managed American institutions.

I know of other institutions in which the cost per patient per day for salaries and wages is twenty-eight cents, which is too low, and of others in which it is $1.50, which is too high.

Municipal hospitals outside of the large cities are quite likely to have small pay-rolls. One reason for this is that the annual appropriation by the city government is kept down to the smallest possible amount. Another reason is that certain city officials and their clerks do, without cost to the hospital, work that private hospitals must pay for. For instance, the city treasurer handles the hospital's money, the city auditor audits its accounts and does part of its bookkeeping, the city collector collects its bills and the police department operates its ambulance system.

The hospital with a cost of $1.20 per patient per day for salaries and wages will give to its patients better service than does the hospital with a cost per patient per day of only forty-five or fifty cents. It will employ more nurses and more orderlies and its housekeeping will be better done. It will employ a competent chef and serve better food. It will maintain first-class pathologic, hydrotherapeutic, social service, Roentgen-ray and ambulance departments. It will furnish first-class telephone, front door, clerical and elevator service day and night. It will employ skilled mechanics and its up-keep will be so excellent that depreciation of the plant will not be appreciable.

It is generally recognized that the structural conditions of a hospital plant are a big factor in determining operating expense. A modern hospital built with reference to convenience and economy of operation will be much less expensive to maintain than one occupying old, poorly planned buildings.

Many hospitals have been built piecemeal. The result is a hodge podge, inconvenient to administer and requiring an excessive number of employees.

SCIENTIFIC WORK

Hospitals which do high-class scientific and educational work are bound to have higher costs than those institutions which do only routine clinical work. They will have a large paid staff doing laboratory and research work. A large intern staff will be necessary, and probably a number of paid, resident-staff men will be employed. All of these men will be furnished with board and lodging, and the salaries paid the men in the pathologic, bacteriologic, chemical and Roentgen-ray laboratories, and those paid the salaried resident staff doing clinical work will amount to a considerable sum. The outlay for laboratory supplies and instruments of precision will influence somewhat the per capita cost.

Hospitals having a reputation for doing high-class scientific work are likely to enjoy the confidence of the public to such an extent that they will have, from a medical point of view, a more important class of cases. The urgent demand on the part of patients for beds in these institutions will result in convalescent patients being discharged early to make room for the more critically ill. The beds will be kept filled with acute cases. Patients suffering with serious or obscure diseases cost more to care for than patients suffering with minor

V. 61
1913

disorders. They require much more care and attention from doctors and nurses.

In the other class of hospitals in which the demand for beds is not so great many of the patients are afflicted with diseases of a more or less chronic nature, are allowed to remain in the institution for long periods, and, in a sense, are little more than boarders and make small demands on the nursing and medical staffs. Patients of this class require much less in many other ways than do acute cases. For instance, they require little laundry work as compared with acute cases. Hospitals catering to this class will get along with about one-half as many laundry employees, and the linen not being washed so often lasts much longer. Neither do these patients require such varied and expensive diets as do those acutely ill. Numerous other items of expense are similarly influenced.

AFFILIATION OF HOSPITALS WITH MEDICAL SCHOOLS

The hospital which is connected with a medical school usually does more for its patients than does the hospital without such connections, and this results in increased cost. I have no statistics of American hospitals covering this point, but the average cost per bed occupied throughout the year in the London hospitals connected with medical schools is about $600, and in those without medical schools $550.

PRIVATE ROOM SERVICE

The larger the proportion of private room to ward patients the larger will be the average cost per patient, as the cost of caring for a private room patient is usually double the cost of caring for a ward patient. This is one reason why municipal hospitals generally have a lower per capita cost as, ordinarily, they have no accomodations for private patients.

A number of hospitals provide paid resident staffs for their private service, thus materially increasing their pay-rolls.

There is a general belief that large institutions should have lower per capita costs than small ones. As a matter of fact, it does not work out this way in practice. The big institutions are generally conducted on broader lines than are the small ones; they have more varied activities. While they buy in larger quantities and are thus enabled to obtain somewhat better prices, it is much more difficult for them to enforce economies and to prevent waste. In the small institutions the superintendent is able personally to supervise most of the details and to enforce frugality in the use of hospital supplies. In the large institutions responsibility is divided. And as economy in purchasing supplies does not influence the per capita cost nearly so much as economy in using supplies the smaller hospitals usually have lower costs.

Some hospital officials assert that their physicians are extravagant and attempt to explain their high per capita costs in this way. This accusation ordinarily is unjust and not borne out by the facts. A study of the expenditures of a number of hospitals with a per capita cost of about $1.50 a day showed an average cost per patient per day for medical and surgical supplies of fifteen cents, while an equal number of hospitals with a per capita cost of $2.50 a day showed an average cost of nineteen cents per patient per day for these items. In other words, the hospitals with the higher per capita costs spent only four cents more per patient per day for medical and surgical supplies, leaving ninety-six cents of their excess cost to be otherwise accounted for.

The question has been raised as to whether or not it is practicable to standardize hospital costs. It seems to me that any attempt to do so must meet with failure. I can understand how the costs of individual institutions can be standardized, but I cannot understand how it is possible to apply cost standardization to hospitals as a body in view of the fact that the work done by them and the conditions surrounding them vary so greatly. It would be just as reasonable to attempt to standardize the costs of two watch factories, one of which is producing a fifty dollar watch, and the other a one dollar watch.

The wise hospital superintendent will try to obtain a reasonable per capita cost for his particular institution, not so high that it will invite charges of mismanagement and extravagance nor yet so low that it suggests parsimony and inadequate care of patients.

He will not attempt to make the expenditures of his hospital conform closely in all details with those of some other hospital, or group of hospitals, as he will recognize that each institution, owing to its peculiar conditions and the character of the demands made on it, is more or less a law unto itself.

12 West Sixteenth Street.

ABSTRACT OF DISCUSSION

DR. CLEVELAND H. SHUTT, St. Louis: In comparing our public hospitals with those of Europe, I think that the situation has been satisfactorily explained by the statement that the differences are due entirely to the governmental differences of the country. European institutions are controlled by more or less permanent influences; our institutions are subject to fluctuating influences; consequently, we cannot establish standards and feel that they will be maintained indefinitely.

The question of how we are to establish satisfactory permanent systems for municipal institutions ought to be solved by this and other allied societies interested in hospital work. We know of a number of cities which have expended immense sums of money, in some cases millions, for institutions, and the results have not been, to say the least, a source of pride. We know of cities that have spent moderate sums of money and have enjoyed good management for a period of a few years and then they begin to have unsatisfactory results. In only one or two of our American cities has a city institution of great size given continuously satisfactory service. I think that the Boston City Hospital can be cited in particular. This is a situation which ought to be corrected. I do not pretend to have a solution of the problem, but I have thought of a number of points on which I should like to offer suggestions.

The only way that we can obtain permanency of system for our American institutions is by establishing a medical service in them which will be so satisfactory to the people and profession that they will not permit a retrogression.

The essayist outlined a splendid and proper line of executive control, namely, a board of directors or trustees who shall have complete and full control of the institution in every particular—in the selection of superintendents, erection of buildings, purchase of supplies and appointing of all classes of employees, including the medical staff.

After a body of this kind is organized they should first give the best treatment to the patients who come to the institution. How can this be done? I believe it has been worked out with eminent satisfaction in a number of European hospitals, especially in Vienna, Berlin and London. In England the college hospital has proved eminently satisfactory. In Europe the best medical men in the community have charge of sections of public institutions of which they have full charge and for which they are responsible. The chief

practically has control of the appointment of his associates and they form a complete and independent organization for each department. There is opportunity for continuous development of good men for the institution and this gives the public the proper confidence in the institution.

Some of the best men in every community are willing and anxious to engage in public hospital service, provided they can be assured of permanency of position and freedom of opportunity for scientific advancement.

Every city, of course, has its local conditions. A city which has only one medical college can work out its public hospital organization without much trouble. There may be difficulty in installing the hospital-college plan, because certain medical men may have positions of medical influence and may hesitate, in the beginning, to accept an inferior position, but this is, I think, for the medical profession to consider seriously. I believe that we hospital men should decide what we would like to do, then go before the medical profession stating that we desire their assistance in establishing something which is going to be permanent for them, for us and for the community, stating that it is going to require some sacrifice on their part in the beginning. I believe that medical men will sacrifice willingly, because I have seen a demonstration recently in my own city, in the reorganization of one of the universities there in which the entire faculty resigned. The majority of them could have held their positions without any question, but they simply resigned for the good of the cause. They said to the board of directors, "You gentlemen appoint a new faculty with the idea of securing as good men for the school as the facilities and accommodations will attract."

MR. W. B. STRATTON, Detroit: Just a suggestion on the matter of plumbing in connection with the hospital. I find that the plumbing boards of this country have developed thoroughly along certain lines, but have not as yet taken up the plumbing of hospitals except to put out catalogs and mark "hospital plumbing" on them. "Hospital plumbing" is their ordinary every-day office-building and hotel plumbing picked out as though it would do for a hospital. I would suggest to the surgeons that they try to think out what they consider ideal in the way of fixtures. They will find the plumbing trade ready to meet them.

THE PSYCHOPATHIC HOSPITAL IDEA*

E. E. SOUTHARD, M.D.
BOSTON

Naturally we are still much occupied with preaching the gospel of psychopathic hospitals in America, since, after all, the realization of our long-cherished ideals is extremely recent (Psychopathic Ward of University of Michigan Hospital, 1906; Psychopathic Department of Boston State Hospital, 1912; Phipps Psychiatric Clinic of Johns Hopkins Hospital, Baltimore, 1913). Nor is the foundation work, which led to the establishment of these three somewhat similar but in many ways contrasted institutions, a matter of very ancient history.

To be sure, Griesinger's idea was early implanted in some American minds. My colleague, Dr. D. H. Fuller, has called my attention to Dr. Pliny Earle's utterance[1] of 1867.

Carbon agglomerated is charcoal. Carbon crystallized is diamond. What charcoal is to the diamond, such I believe, is the psychopathic hospital of the present compared with the psychopathic hospital of the future. . . . When the defects which I have mentioned shall have been thoroughly remedied by a comprehensive curriculum, a complete organization, a perfect systematization, an efficient administration, the charcoal now just ready to begin the process of crystallization will have become the diamond and the world will possess the psychopathic hospital of the future.

The movement which interests us is more modern. I think especially of Mosher's Pavilion F; of the New York Lunacy Commission's Pathological (later Psychiatric) Institute; of the institution of modern clinical laboratories at Danvers and Worcester, Mass., and at the Government Hospital for the Insane, Washington, D. C. Earlier still we must remember Cowles' work of introducing the seminary idea into insane hospitals and of encouraging science of several sorts in their laboratories, of the early Germanizing and later individual stimulation of American psychiatry by Adolf Meyer, of the extraordinary address of S. Weir Mitchell[2] at a meeting not so long ago of the American Medico-Psychological Association which awoke echoes all about. Back of all this the university and modern scientific movement have contributed in ways impossible here to trace.

I embraced the opportunity to speak before the new Section on Hospitals of the American Medical Association because I knew that many, if not most, of its members would be practical men in charge as a rule of general hospitals. From my general hospital experience I know how important are the proper arrangements for the insane in general hospitals, and I wish to urge unconditionally that their superintendents look to it either to give their insane patients proper accommodations within general hospitals or to spend time and energy getting their local communities to establish proper psychopathic hospitals.

Some of the best general hospital superintendents I have ever known have blinked this problem. Most of you are quite cognizant that excited and delirious patients are not getting proper treatment in general hospitals. The excuse for drugging and tying down the excited and delirious in general hospitals is that other patients are prevented from suffering thereby! The justification for chemical and mechanical restraint is therefore the greatest good to the greatest number.

The reply is simple. There is no excuse for not treating the excited and delirious in general hospitals by the methods long since elaborated in hospitals for the insane. These methods—hydrotherapy, special attendance, isolating-rooms and common sense—can all be supplied in general hospitals except hydrotherapy and isolating-rooms. I have no doubt that all will agree that this proper technic of therapy is not applied in more than a handful of general hospitals, if in so many as a handful, in America.

This topic is so much in my mind that I must be given leave to introduce my notion of the varied functions of the psychopathic hospital herewith. I would call especial attention to forthcoming work by Dr. Donald Gregg, who will give a statistical foundation for my statements, discussing the mortality of delirium tremens in general and insane hospitals, in a communication to be presented at the first annual conference of the Psychopathic Hospital in Boston. I beg leave here to quote Gregg's conclusions:

* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

* Being Contributions of the Psychopathic Hospital, Boston, Mass., No. 1913.26. Bibliographical Note—The previous Psychopathic Hospital Contribution entitled, "A Study of Human Behavior" by Prof. M. Yerkes, will appear shortly in the Boston Medical and Surgical Journal.

1. Earle, Pliny: The Psychopathic Hospital of the Future, address at laying of the corner stone of the General Hospital for the Insane of the State of Connecticut, June 20, 1867, Utica, N. Y., 1867.

2. Mitchell, S. Weir: Address before the Fiftieth Annual Meeting of the American Medico-Psychological Association, Philadelphia, 1894; Proc. Am. Med.-Psychol. Assn., 1895, 1.

V. 61
1913

1. The results of the eliminative treatment of the deliriums with relative freedom and hydrotherapy, and a minimum amount of medication, far excels in effectiveness the usual treatment by restraint and depressant drugs in cases of the symptomatic psychoses, including alcoholism.

2. Every general hospital should be provided with the facilities for treating properly cases of delirium. Such facilities should include isolation wards where quiet is not essential, and continuous bath apparatus for hydrotherapy.

3. The present situation in Boston, where no general or insane hospital is ready to take and adequately care for cases of simple delirium tremens, is one that should be promptly remedied by the establishment of a public hospital properly equipped for the treatment of inebriety.

But, you will ask, how is the problem of delirium tremens the special task of a psychopathic hospital? Surely it is not the major task thereof. Yet I conceive that it will be an important task of every reception hospital constructed on modern lines to indicate by its mortality tables for alcoholics and by ocular demonstrations of its hydrotherapeutic and non-pharmacotherapeutic methods what similar reception units should be accomplishing in general hospitals.

In this connection I shall quote a brief paragraph from my annual report as director of the Psychopathic Hospital in Boston. Although perhaps the modern psychopathic hospital should not have alcoholism as its major task, yet as to the Boston institution:

It is to be observed that many cases (thirty) which have eventually to be classified as delirium tremens do in some way get admitted to the Psychopathic Hospital. A still larger number of cases (fifty-four) of the allied disease, alcoholic hallucinosis, are admitted under the temporary care law. The latter, or hallucinosis group, is not specifically excluded by law (as is the delirium tremens group) from admission. It is probably true that the Psychopathic Hospital is somewhat better able to take care of both of these groups of cases than any other local institution, but it is also true that these cases are taken care of at the expense of the non-alcoholic insane, occupying the beds of persons falling more strictly under the authority of the State Board of Insanity. Common humanity and mistaken diagnoses account for most of our admissions of delirium tremens cases. It would seem that a Boston branch of the state hospital for dipsomaniacs should be strongly considered by the proper authorities, and that not only the delirium tremens cases, but many other somewhat curable cases of alcoholic psychosis might well be classified at such a branch.

It is well known that the whole question whether there should or should not be special hospitals for dipsomaniacs cannot be regarded as settled, for the whole country at all events. It will remain the task of numerous, nay the great majority of, general hospitals, to take charge of the acute alcoholics of the community. To do this adequately, the majority of such hospitals will need extensions and new hydrotherapeutic arrangements.

I have plunged *in medias res* by stating to you the mission of the Boston Psychopathic Hospital, which should occupy us for some years, namely that of demonstrating some pretty well-known truths concerning the treatment of delirium, whether delirium tremens or other forms. There is, however, a possibility of novelty for us in this field, as some forthcoming work by H. M. Adler, Chief of Staff of the Psychopathic Hospital, will show. He has secured a quantitative record in the red blood-cell count of the effects in reducing the count in certain cyanotic patients by means of prolonged baths. In certain instances he has been able to predict the probability of an excitement in a patient by the observation of oncoming cyanosis.

What are the major problems of a psychopathic hospital? I have perhaps indicated to you that I feel that they are largely, or at all events extensively, somatic in character, yet a review of the communications to be read on the occasion of the first annual conference of the Psychopathic Hospital in Boston, to be held June 24, 1913, will demonstrate that these problems are much wider in scope than those with which I have before dealt too much *in extenso*.

In the first place, let me insist that far too little stress has been laid in this country on sociologic and psychologic matters in their relation to medicine. In a recent analysis of papers produced by officers in the state institutions for the insane in Massachusetts, I found 43 papers dealing with structural changes in the nervous system, 15 papers dealing with somatic non-nervous changes, 12 dealing with general considerations, 11 dealing with strictly clinical considerations and 7 dealing with psychologic matters. It is clear that such a distribution of interests is by no means a natural one. I found that a fair distribution of interests in our first annual conference divided the medical and social results of our first year's work into about equal parts, from which I conclude that the outpatient and social service relations of a psychopathic hospital must be among its most important functions.

I shall dismiss the remainder of my discussion in brief paragraphs, although I know that each of the main topics would require a discussion somewhat similar to that which I have given of our mission with respect to delirium.

We have at least as important a mission with respect to syphilis. When the patients admitted to a state institution for the insane show positive Wassermann reactions in 22 per cent. (H. L. Paine's data, Danvers State Hospital), or, as at times for certain months at the Psychopathic Hospital, from 25 to 30 per cent., it is high time that social workers and economists as well as physicians should begin to take an interest in that field of mental hygiene which shall seek cooperation with the sex hygiene propagandists. Two features of the syphilis situation have struck me during the last year. In the first place, Dr. W. P. Lucas has shown the great importance of syphilis in the children and adolescents coming to the Psychopathic Hospital outpatient department. The percentages are by no means final, but arrest attention. The relation of syphilis to specialized defect of the mind, coupled with defect in auditory imagery, has also received attention in our examining-rooms. It has been possible to advocate special educative measures in certain cases with specialized auditory defect in imagery. Auditory defect in imagery has been shown to be much more common than visual defect in imagery. Certain backward children, as a result of Dr. Anderson's work, can be given specific visual instruction to replace the auditory type used in many schools. The problem of certain "terrors" in school may thus be partially met.

In the second place, the novel suggestions of Dr. Homer Swift of the Rockefeller Institute give opportunity to optimistic therapeutics in the field of general paresis and other forms of cerebrospinal syphilis.

Here is a field in which a psychopathic hospital can work far better than the state institution of older style, since many hands, medical, nursing and technical, are at hand in a psychopathic hospital equipped for the pursuit of general medicine.

With these inadequate words I leave the topic of syphilis in a psychopathic hospital; but of course, syph-

ilis is a problem which is in many ways transmedical and will require the cooperation of social workers and economists to the last degree if we are ever to "scotch the snake."

I have studied the social service movement with a great deal of interest and have made many friends among the social workers. There is a new but growing sense of the value of social work, and the accompanying sense of pride on the part of the social workers themselves is much in evidence. For this I do not blame the social workers, but we must all fear that the well-known spiritual pride of physicians meeting this now as yet uncertainly founded pride of the social workers will forbid the best cooperation for some time to come. Perhaps this is particularly true in mental medicine; for alienists have long been social workers in their fashion. They have been more truly economists and social workers than the general practitioners or specialized physicians of our general hospitals, and have been approached only in their economic and social sense by the superintendents of general hospitals. As you know, however, the latter have been recruited in many significant instances from among superintendents of hospitals for the insane, so that the group represented by the Section on Hospitals before which I am now speaking is a group in which the existent sense of social service is perhaps largely derived from long-standing medical contact with psychopaths. The new movement requires cooperation and coordination between physicians and the new lay forms of social service. Progress should be made in every community to determine the dimensions of the social problem as it affects the psychopath. In many states the minor wards, the adult poor and other largely non-psychopathic dependents have been pretty adequately cared for by systems employing lay visitors, investigators and other agents of centralized boards. Social service for psychopaths, except those who are met in the various classes just mentioned, is as yet non-existent in any systematic and well-rounded form. Estimates will be shortly available concerning the dimensions of this problem also. For example, the Psychopathic Hospital Outpatient and House Service in Boston has been shown to demand very probably about eight social workers, and the problem of the rest of the state, should it remain at the present level, could perhaps be covered by seven more. Experience, however, shows that preliminary estimates are, as a rule, too low for this form of work. The leaders in social service do not yet understand adequately the difficulties in social service for psychopaths, having had their minds riveted on problems of investigation, financial and social relief not systematically involving the somewhat less predictable proceedings of the psychopath.

So much for the suggestion of problems being attacked in the modern psychopathic hospital. I have brought into stronger relief the problems of delirium, of syphilis and of social service than others. Nor have I mentioned the more intimate, complex and difficult problems of pathogenesis and etiology in mental disease which the workers attracted to a proper psychopathic hospital will engage in. I had not thought it worth while to present such matters to the section before which I report, and refer my hearers to special contributions elsewhere. Let us hope that American enterprise and imitativeness will far more speedily bring about the dotting of this country with new hospitals, each an advance on its predecessor and, in conformity with the American spirit of autonomy, no one exactly like another. Some say there should be a psychopathic hospital in every city of fifty thousand inhabitants; others say in every city of a hundred thousand inhabitants. Such claims refer, of course, rather to receiving hospitals with an immediate diagnostic and therapeutic aim than to more elaborate institutions of the Ann Arbor, Boston and Baltimore types. The necessity of smaller psychopathic hospitals would be largely removed, should the general hospitals of the cities in question think it worth while to face the problem of the acutely insane of their districts.

Whose fault is the present reign of ignorance as to the proper treatment of the acutely insane? The practitioners in neurology say that they have warned general hospital superintendents concerning their duties with respect to installation of baths, special attendants and isolating-rooms for the delirious. The surgeons and physicians say that these matters are largely in the hands of interns under the present system; and some say that proper residents of longer experience will meet the problem. I am not sure that we can absolve the neurologists and even more the hospital internists from responsibility for the poor treatment which the insane receive in general hospitals. I am certain that an organization like this Section will do much good, for its members can push on the financial side of the problem by providing ways and means for the installation of proper nursing and other external arrangements. To-day is certainly an era of busy interest in sociology. The psychopathic hospital in a community is bound to be one of the most concrete sources of enlightenment as to psychopaths, and every society for mental hygiene, for sex hygiene, for the amelioration of alcoholism, for eugenics, should make it part of its business to help start a psychopathic hospital with its outpatient service in every community in which there is any hope of awakening social sense.

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ABSTRACT OF DISCUSSION

Dr. John A. Hornsby, Chicago: A week or two ago I was called to account because of a page in my work on hospitals concerning the restraint of patients. I am wondering whether Dr. Southard has run across the same class of cases as we have and what he would do with them. For instance, a patient who has been operated on develops surgical delirium tremens. He begins to yell and fights if you undertake to prevent his yelling. He fights against every sort of restraint. If you let him go to the limits of the room and his surgical injury is such that he can be allowed to go there without danger, then he fights to get outside. What would Dr. Southard do with a patient of that sort?

Dr. E. E. Southard, Boston: We cannot treat these cases in the ward of the general hospital as it exists at present. The method of treatment which you have carried on in the general hospital as at present constituted seems to have something to do with other patients in the vicinity. Now we should not be averse to treating a patient after a certain fashion because there are other patients in the vicinity. We should have proper conditions. We should have isolation rooms. We should have wards with safety deposit vault ventilation principles in which noise could be eliminated. I do admit that is really a problem. The general hospital superintendent will have to contrive to have some money spent on modern devices for prevention of noise, prevention of the transmission of noise, so that it will not disturb the neighborhood.

In the next place, if it is an opened peritoneum that the patient might take the sutures from, the restraint is obviously necessary. I suppose no one would deny the importance of keeping the patient's hands out of his peritoneum. However, many of these cases are under a certain amount of

V. 61
1913

depressant treatment anyhow, without resorting to a drug. I take it that that question is hardly a problem of great moment.

But if you have some properly ventilated noise-proof ward in your plant, equipped with modern hydrotherapeutic appliances, you will, I think, reduce a good deal of the violence which characterizes many of the general hospital wards in which I have worked.

According to Kraepelin a delirious or excited patient should not be strapped to the bed. If he does not stay in bed he should be placed in a warm bath of blood heat, and if he will not stay in this bath with gentle persuasion he should be put into a moist, warm pack for a limited period. He is given to understand, if he can understand what is going on, that it is to be for a limited period, an hour or two; he should then be removed and placed in bed. If he will not stay in bed he should be placed once more in the warm bath, and if he will not stay there, once more in the pack. This cycle of bed, bath, pack is repeated ad libitum through the night, if you have the nurses. You can seldom find a superintendent who will give you nurses for this purpose, because they are not to be had. Still this is indicated by the therapy of the patient, and why not do the best for the patient, if you are going to permit him to recover? There is hardly a case of the non-surgical sort in which there is not positive danger of infection of the wound that will fail to be benefited by this simple hydrotherapeutic procedure which Kraepelin has advocated and which has some thirty years of history back of it.

So I say a new type of ward and new hydrotherapeutic measures will meet most of the problems of the delirious patient met in the general hospital. There might be a few, as Dr. Hornsby mentioned, whom we might have to put in the insane hospital.

How many patients of this kind do you think that there are in a year in your hospital, Dr. Hornsby?

DR. HORNSBY: In a hospital of 350 beds, of which I have been in charge, I should say three a week. The percentage of surgery is large. We do in that hospital from twelve to fourteen major surgical operations a day.

DR. SOUTHARD: Well, then it would not cost an extraordinary amount of money to put up a plant like that in the Belfast and London institutions and put in hydrotherapy and treat these cases in that way.

DR. JOHN A. HORNSBY, Chicago: It is not the cost of such an institution in that case, I take it. The cost is in transportation of the patient, especially from the general ward or from the quiet room, to such an institution and the cost to the other patients in such a case.

DR. ARTHUR B. ANCKER, St. Paul, Minn.: It seems to me that it is not so much a question of the noise, and the consequent disturbance of the other patients, as it is a question of preventing the patient from doing great injury to himself. Not an insignificant proportion of the surgical patients who have developed delirium tremens have wounds that make it important that they should be, as it were, immobilized; in some cases we are told that they must not be allowed to sit up in bed, that there must be no exertion whatever; so even supposing that we had the hydrotherapeutic equipment, in many cases the patients would necessarily be deprived of this treatment because we would be unable to take them from their beds. We, at the hospital, have had many opportunities to consider all these conditions, and, while I believe that the treatment which is most in vogue in general hospitals is not altogether humane or desirable, yet I have seen two or three hundred cases in thirty years and I have rarely seen one in which we did not have to do something in restraint of violence, and I cannot quite understand how, under the circumstances, one could well avoid the use of restraints or the use of drugs or the use of both of them. The police ambulance brings us many victims of long debauches suffering from delirium tremens, probably a couple of hundred a year, and I quite agree with you that the hot pack, hydrotherapy and a sufficient number of nurses are essential for the proper care and treatment of that class of cases, but it is not to that class that I am particularly referring; we have to deal with a condition that complicates not an inconsiderable number of the surgical cases that appears a good deal like delirium tremens; these are the cases that we have to keep in bed, that we cannot put in hot packs, and that we cannot take to the hydrotherapeutic room, even supposing we have one; the kind of a case that leaves us nothing else to do but to use restraint or give some kind of a drug to put the patient to sleep temporarily.

DR. E. E. SOUTHARD: I should like to say a word as to restraint, with respect to the bath-tubs. Really it is not a restraint and those little knobs that one of the plumbing companies puts on the tubs which permit you to tie the patient in ought to be left off.

DR. RUPERT NORTON, Baltimore: Suppose you have them in a pack?

DR. SOUTHARD: The pack is a restraint up to a point. The patient, however, as I say, is told at certain times what it is for and, if he understands that, so much the better. If he cannot understand what is going on it goes to restrain him.

There is no psychologic objection to restraining an unconscious person, I think. There is an objection on the part of psychology in this instance because the patients understand, but there would be really no objection, I take it, to restraining an unconscious patient. Of course persuasion is, in a sense, a sort of restraint; you exert a mental effect on the patient. The discussions of Dr. Hornsby and Dr. Norton have led to a description of a small number of delirium cases, whereas what I was talking about was the large group of delirium tremens cases. In almost eight hundred necropsies at the Boston City Hospital about 8 per cent. proved to be really mental cases, chiefly cases of delirium tremens. Now I am quite convinced from the result of these necropsies that a good many of the patients might not have died if proper treatment had been employed. Of course one might say "What do we want to treat them for? Why not let them die?" That is, however, not humane.

DR. CLEVELAND H. SHUTT, St. Louis: I believe that most delirium tremens patients can be treated by hydrotherapy, but we know that there are certain cases in which this treatment is impossible. A patient has been shot in the abdomen and it is necessary to place drains in the abdomen in several places. We can use hydrotherapy to a certain degree, if we are enthusiastic in that direction, but we can accomplish most for the patient by using restraint and drugs. Traumatic injuries, complicated by delirium tremens, will also require judicious treatment without frequent transferring from bed to tub, or even placing in water, and risking danger of infection.

DR. H. B. HOWARD, Boston: I am convinced that there is more or less ill-advised restraint in our general hospitals. I think that it comes about in this way: A delirium case develops in the night and there is nobody but the house physician and the superintendent there, and if the rules of the hospital are not such that the superintendent has to be called in to each one of these cases, there is no doubt that there is ill-advised restraint applied, because it is applied by the young man who has never had any training in an insane hospital and it is applied in a crude manner.

Dr. George F. Jelly used to say that before you tried restraint you ought to see what light and society will do for your patient. Now we would add to light and society continuous bath.

DR. E. E. SOUTHARD, Boston: I wish that the state board would request the superintendents of general hospitals to obtain a record.

DR. HOWARD: If they had any authority over them doubtless they would. I admit that there is a good deal of ill-advised and poor restraint. Perhaps restraint is necessary in a few cases and it can be so applied as to be of little damage.

HOSPITAL AND ASYLUM WORKSHOPS

SOME POSSIBILITIES OF HANDICAPPED LABOR *

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It is so hard for well people to make a living that the casual thinker will not believe it possible for sick men to work effectively and without harm. When the invalid is poor we perform but the natural part of charity if we give him medical treatment and save him from the necessity of work. Yet experience has shown that in many chronic illnesses effective and remunerative work may be accomplished with physical and moral benefit to the workers.

The object of this paper is to suggest the possibility of workshops for the chronic invalids who haunt the outpatient departments of the great hospitals and who have collectively a great deal of efficiency and skill, though they cannot find places in the usual fields of labor.

We do not have to search long for suggestive examples of work among handicapped people. The blind have thriving industries, the cripple schools have for a long time been engaged in teaching their pupils trades adapted to severe limitations. One of the most refreshing activities of modern institutional life is to be found in the schools for feeble-minded such as that at Waverly, Mass., where, under Dr. Fernald, there is an effective system manned almost wholly by patients who in the old days would have been idle. In the insane hospitals all over the world the patients are more and more generally given work to do in connection with the farms and households, and lately in workshops like that of Dr. Tuttle at the McLean Hospital in Waverley and at the Hans Schönow under Dr. Laehr in Berlin. Besides all this activity in charitable or semicharitable institutions, there has of late years been a remarkably effective use of modified work as a remedy in the sanatoriums for the treatment of nervous exhaustion among people of means who have overworked and overworried or who are suffering from the effects of too much idleness. These industrial experiments have all been so hopeful in their results, so beneficial to the workers and so surprisingly productive that it seems almost certain that important developments may be expected from outpatient industries.

My own experience has been in sanatorium work with nervously exhausted patients. I have found that among persons of education and taste the ancient handicrafts offer a most interesting and profitable means of regaining strength. I believe that some modification of this crafts-work system will be easily available for hospital shops. With a basis of this kind we should be able to show the therapeutic possibilties of work in a large range of cases. The economic possibilities for hospital patients remain to be proved, but they are decidedly interesting.

Crafts work is a vague term and may be easily misunderstood. It means, generally speaking, work by hand instead of by machine, and it includes almost any useful and ornamental product, from a rug to a coal scuttle. The important difference is that the crafts work at its best is confined to products that can be made better by hand. The world is beginning to appreciate that a great many articles of daily use are best produced in this slow way. It is true that the finest work of the craftsman, the goldsmithery and silversmithery, the wonderful dyes and weaves that make inimitable fabrics, can be done only by highly trained workers. But there is an enormous mass of routine and preparatory work in the crafts, and this work can be done perfectly well by handicapped persons if they are carefully directed and controlled.

Men are thrown out of employment for very trivial reasons—it does not follow that they are good for nothing because they fail to fit the particular job they happened to find available. The new system will gather up these sick and discarded workers and adapt them to work which will be graded and controlled to meet any degree of handicap. There will be some agreeable surprises for those who bring this plan to pass. Many a woman considered unfit by the great industries, many a man injured or worn out by the grind of the factories, will prove to be highly efficient under conditions that are slightly altered to meet the especial need. The wasteful policy of the regular industries may or may not be necessary, but it is likely to necessitate a secondary system of labor. Some day it will be impossible for society to support the number of sick and idle; then the new system will come in earnest.

In their beginning the new workshops will have to be subsidized, for they will count the worker more than the machine and that will mean small returns at first. But there will be few high-salaried officials under the new plan and the profits will go to the workers. That is one of the reasons why such a system may be successful financially in these days of struggling industry.

As I have watched handicapped labor—grateful, loyal labor it usually is—I have been deeply impressed with its possibilities; for I have watched also the slow steps of the dissatisfied and unscrupulous workers in some of the regular industries and I am not sure that the handicapped workers will fall so very far behind.

In any event, the new work must be a great deal more than a plaything. We have no right to ask our handicapped operatives to give their time and strength, even if they improve physically in the process, unless the work is worth while, unless it has a ready market value. That is the final test.

From personal experience with a different class of patients I believe that hospital workshops of varied kinds may become nearly or quite self-supporting. During the past few years I have, as a matter of fact, been able to build up such a business in a small way and a good deal of the time it has been made to pay. This work has been conducted as a private venture with very little outside help.[1] The workers, it is true, have been people of high intelligence and not in need of self-support, but they had given up, they were not able to succeed under ordinary conditions, so the principle is the same. This small business has been under way nine years. During the past four years it has been a little more than self-supporting, although before that it was a decided financial burden.[2] The work has succeeded because we have always had expert workmen guiding and directing at every point. Such shops are, of course, partly professional. I believe that this professional combination must always be followed. Handicapped workers alone are almost surely helpless; working in cooperation with experts they may become a tremendous source of power.

* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

1. Twice within the past nine years I have received a grant of $1,000 from the Proctor fund to assist in the study of chronic diseases.

2. Owing to enlargement of the plant the workshops have recently failed again to meet expenses.

V. 61
1913

We have tried hand-weaving, metal-working, wood-carving, leather-working, pottery, basket-weaving, and cement-working. We have dropped all but the pottery, the hand-weaving and the cement-working because we could not see our way to making the others pay.

Last year five persons working in the pottery made and sold six thousand dollars' worth of pottery. Two of these people were professional potters, one was an apprentice, and two were former patients who because of illness could not meet successfully the conditions of life outside. One of these patients, a woman, had been a surgical patient with profound neurasthenia of long duration. She began her work with little power of sustained effort. The other was a young man so handicapped physically that he might not have been successful even here without medical management. I present this experience simply to show that the idea of using the handicrafts is not altogether impractical.

The money value of handicapped labor has been demonstrated again and again, in institutional life at least. Last summer a small group of men patients at the State Colony in Gardner, Mass., under Dr. La Moure, produced forty thousand dollars' worth of supplies from the hospital farm. That return, at least, would not have materialized without the use of handicapped labor. We hardly need to be assured that the men who worked on that farm were not overworked and that they were physically and mentally better for their experience.

Out on the Pacific coast, Dr. Philip King Brown has within the past two years established a pottery, in which, under expert guidance, a group of convalescent tuberculous girls are paying their expenses—a dollar a day—while they are under sanatorium treatment.

We are beginning to see the possibilities of a principle, which, given systematic application, may change the face of charitable affairs, a principle which may be expected to restore many discouraged and enfeebled workers to full efficiency.

There are many trades and crafts which may be adapted to this purpose. Some of the craftsmen in my shops have been experimenting for the past two years with ornamental cement work as a possible field for hospital shops. We have found, among other things, that practical and beautiful flower-pots and an excellent quality of brick and tile may be made cheaply and expeditiously by people with little strength. We are finding in hand-weaving a field of the most brilliant possibilities. It might be supposed that in these days of machinery, hand-weaving would be a hopeless thing. On the contrary, it is possible to do by hand especial and individual patterns that the power looms would never stop to undertake. There is a ready market for these specialties in weaving and cement.

If possible, we should have some sort of central bureau that can conduct extensive experiments and that can oversee the entire field and help to establish practical workshops where they are most needed. Such a bureau could conduct a normal school for the training of teachers and assistants. A central office would hasten the day of accomplishment by many years. It would save expensive mistakes and might supply materials, designs and formulas, besides answering many puzzling questions which are sure to arise in connection with the technical part of the work and in relation to the effect of occupation on individuals and classes.

There are, of course, pathetic limitations to such a plan and many a willing worker could not succeed; but is evident that a great deal might be accomplished and there ought not to be a long delay in realization.

My suggestion is a definite one—that such workshops as seem most practical be experiementally established in connection with the outpatient service of a few of the general hospitals. In this way we should soon find out in what particular ways employment would supplement the work of the medical and surgical departments. I am sure that the workshops would prove of tremendous value to the social service workers, who are finding it more and more difficult to secure occupation for their charges, and who will tell you without hesitation that vice and crime breed best in idleness.

The plan must not be left to be worked out by enthusiastic, but untrained, people. Such a course would bring delay and discredit on the whole system. Medicine, social service, the crafts and business management, these are the elements that must be brought together if we are to see the best results. I believe that the thing can be easily done and I recommend the matter to your serious attention.

Until the time when this industrial branch of medicine can be taught in a larger and better way, my own little shops at Marblehead are open for demonstration and as a training-school for nurses or craftsmen who wish to go as far as we have gone. It gives me great pleasure to be able to say that the superintendent and trustees of the Massachusetts General Hospital have already seen fit to authorize the establishment of an outpatient industrial department on the lines of the Marblehead workshops. This Massachusetts shop will be in operation within a month, so that it soon will be possible for visiting men to study the principle under actual hospital conditions.

MUNICIPAL HOSPITALS AND THEIR RELATION TO THE COMMUNITY*

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Speaking broadly it may be said, without fear of contradiction, that the municipal hospitals of this country are a disgrace from almost every point of view and do not serve the purpose they should in any respect. The exceptions can be counted without difficulty on one's fingers. One of the best is the Boston City Hospital, and the worst, considering the city in which it is situated, is the Cook County Hospital of Chicago. Between these two there are hospitals of all grades. The new Bellevue Hospital in New York could in a few years become a noteworthy institution, but there are many conditions which stand in the way of its development along the best lines possible. In Baltimore there is the beginning of an excellent institution. The same may be said of Cincinnati and of some other cities. Throughout the country there are many well-built hospitals, but there their value almost ceases.

Let us stop for a moment to compare these conditions with those which exist in Germany. There the municipal hospitals are the best in the world, and many towns with a population less than that of the American cities I have mentioned have first-class hospitals from every point of view. Recall for an instant the famous hospitals in Berlin, Hamburg, Cologne, Düsseldorf, and many others. Why should there be such a difference

* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

when America is so wealthy a country? In Germany hospitals are built and managed by experts. First, there is a most careful consideration of the site by hospital and municipal authorities, and, when this is chosen, the greatest care is exercised in drawing the plans for the hospital, a task again performed by an expert. When the hospital is built, its management is entrusted to trained men. The hospitals in all German cities in which there are medical schools are used by the medical schools for instruction and scientific work, and where there are no schools, the best physicians in the town make up the staff of the hospital. In Germany it has long been recognized that the best service is obtained in any hospital by having it associated with a medical school, and, if that is not possible, by at least having the leading medical men of the community in charge. As a result of this broad point of view, the hospitals in Germany lead in almost every way and are the ones to which we all turn for instruction, not only in the practice of medicine, but in hospital construction as well.

It is not altogether easy to explain why the Germans have taken this lead, but there are certain fundamental facts which have played their rôle. The scientific mind of the German has led him to work out this problem as he has others and become a master in it. But why should he have given so much attention to hospitals? Because he has recognized what hospitals mean to the welfare of the community. Again, their development has been absolutely free of the evil influences of political parties. In brief, these may be considered the leading reasons for the position of German hospitals at the head of all others. I shall, as I go on, develop some of these thoughts further and show why it is that America is still so far behind.

In Germany hospitals are show places, like schools, opera-houses, and other municipal buildings, while in this country we would seldom take a stranger to see our municipal hospitals, but rather divert his attention to other places more attractive.

It would require too much time to take up the question of municipal hospitals in France, England and elsewhere, and it is not necessary for the purpose of this paper. All I desire to do now is to point out our own deficiencies as compared with the best and try to show how our defects may be remedied and how we may take an equal rank with Germany in this part of our social life.

I stated a moment ago that the German had built his hospitals so perfectly because he saw what they meant to the welfare of the community, and here I think I may well draw your attention for the moment to one of our national traits, one which has its fine as well as its evil side, and that is our carelessness to loss of life. Yearly, through our indifference, our haste and readiness to put up with evils we might easily control, thousands of lives are needlessly lost by death or wasted by illness. We are improving in this respect, but how slowly! This thoughtlessness has led our cities to the poor construction of hospitals and their still worse administration, or to failure altogether in building hospitals. It is this indifference which accounts for the continued pollution of our sources of drinking-water and the constant prevalence, as a result, of typhoid fever, another cause of loss and waste. When we have had hospitals to build, whom have we selected to do this? Often men absolutely incompetent, who know nothing of what a modern hospital should be, and who do not take the trouble to inform themselves. The best architect cannot build a hospital from intuition. The modern hospital is too complicated a structure to be erected without most thorough study, and the best architect will fail unless he associates himself with those who know the inner administration of a hospital. Plans for hospitals have usually been called for from local architects, who have not the fundamental knowledge necessary, or the architect has been appointed because of social or political influence. I shall not lay too much stress on this point, for we all know how few of our municipal hospitals can be compared at all favorably with those of Germany. The new hospital at Cincinnati is an exception and we may well be proud of it. This is largely due to the study of Dr. Christian R. Holmes and the time and devotion he has given to working out and perfecting the plans. There is no reason why from now on our municipal hospitals should not become models of perfection so far as construction goes.

None will deny that many of our failings are due to political conditions in our large cities. The system of political spoils has interfered in every way with municipal undertakings. When money has been secured in one way or another for the building of a hospital, it has often been extravagantly expended, or wasted through incompetence, or stolen by dishonest contractors. As a result, the community did not get what it should have in the way of a building. This, however, was not the final step in the degradation. After the hospital had been built, it was put in charge of a superintendent who knew little or nothing of his duties, through his "pull" or because some politician wanted to find an easy place for an old and worthless henchman. With this start it was quite impossible to secure the services of the best physicians of the community, for the administration being under political influence, the term of service was most insecure, and at the same time the selection of attending physicians and surgeons did not insure the confidence of the public. The final and general result has been that our municipal hospitals are institutions which the public is now generally ashamed of, and it has good reasons to be.

I have sketched hastily the main conditions of our life which have brought about this most unsatisfactory condition. We are a young country, we have not been inclined scientifically until within a short period of time, we have been and are still extremely indifferent to life and we have been for years in the hands of political ringleaders. These are general principles which with but little change can be applied to almost all of our communities, both large and small. Politics, as thought of in the popular way, has been a game and a business in this country and has influenced our communal life in many ways, both for good and evil.

It may now be asked, What can we do to improve conditions? I do not think that this will be found a difficult task. Our communities are awakening to their physical needs and learning that they need not be playthings for a group of dishonest politicians. All that our communities need is education. Each of us needs education along many lines, and it is not surprising that our people, who have up to the present led easy and successful lives, have paid but little attention to their physical ills and discomforts. The easy conditions of the past have changed, however, in the last few years, and living is no longer easy for a large mass of the population, whose needs require careful attention. A successful, happy community is a healthy one. To be healthy, the community must be provided with those

V. 61
1913

conditions which keep it from being sick and which take care of it when it is sick. The first and foremost requirement to this end is abundance of pure drinking-water, and the second is one or more hospitals.

How many hospitals does a community need? This, of course, depends somewhat on the size of the community, but not altogether, for certain ailments will appear in every community. Where there are children, we shall have the contagious diseases of childhood, and these diseases cannot be cared for in the same building with other non-contagious or non-infectious diseases. In larger cities, the needs of hospitals for various diseases or classes of patients increases; while generally these might be on the same plot of ground, yet it would not always be wise so to construct them.

In a large city there is need of a general hospital for acute medical and surgical cases; one for chronic cases, both medical and surgical; one for contagious diseases, including syphilis and gonorrhea; one for tuberculosis, and one for insane patients. For all of these there should be outside the city at no great distance convalescent homes. I do not think it is worth while in this paper to attempt to draw up any scheme as to the number of beds required, or how a hospital or hospitals of this kind should be constructed. I wish merely to make plain what the needs of a large community are, and what the duties of the community to itself are. It must care for its sick and it should care for them in the best way possible. A patient cannot be given too good care. The quicker he gets well, the greater the saving in the cost to the community. Health means wealth, and a community can well afford to spend sums to prevent illness; sums which seem insignificant when compared to the endless cost of caring for its sick. In caring for its sick, one of the first duties, if not the first duty, of a community is to see that its hospitals fulfill their end, and it should construct them with as much interest and thought as it does its schools, court-houses and city halls. It is not worth while to build expensive schoolhouses if you have sickly children to send to school; and simpler and smaller court-houses would be needed if the health of the community were good, for there would be less crime, and, to go one step further, the greater the health of the community, the less the need of many hospitals. As I mentioned before, the hospitals of a community should be so built as to be attractive, not only to visitors, as that is of comparatively little importance, but also to the sick within their walls.

Too little attention has frequently been paid to certain of the most important parts of municipal hospitals. Not alone the wards but also the kitchen, laundry, boiler and electric-light plants should be hygienically constructed. Too often the kitchen is dirty, ill built and ill placed and entirely lacking in that attractiveness which it should possess. This is also true of the other departments mentioned. In the construction of the hospital it apparently has not been considered necessary to give these dependencies their proper attention, almost all of the money having been put into the wards; but even so, the ward lavatories and water-closets are seldom what they ought to be. They are too small and are usually ill ventilated. On the good planning of the kitchen, laundry, dining-rooms and other quarters for the help depends much of the success and efficient and economical administration of the hospital. The quarters for the nurses also should be airy and comfortable; the nurses should not be housed in overcrowded rooms, badly ventilated and heated. Without giving thought to all of these points and many others in the construction of municipal hospitals it is impossible to secure a first-class institution.

What hospital in this country has thought of disinfecting the water flowing from the necropsy-room, or still more, the waste water of the hospital? This is done in some of the newer institutions in Germany and should be done in all American hospitals if there is danger of the drinking-water of the community being polluted; and where in America does this danger not exist? So long as our drinking-water has to be filtered, it should not be lawful for a hospital to endanger it through contamination with its foul waste-water.

It seems to me very necessary to lay stress on these points, for I believe that municipal hospitals will in the near future become more and more important to the community. Private hospitals are too expensive to be founded and properly supported except by a few rich men, and our municipal hospitals should not rank in attractiveness and value behind private institutions, but should be at least equal to them. No satisfactory reason can be given why persons of all classes should not be willing to go to municipal hospitals for treatment, and this is not the case to-day. In a well-planned municipal hospital there should be graded accommodations for the rich, the middle class, and the poor. To-day the middle class receive in all our hospitals, both private and public, the worst accommodation. By that I mean that they must usually be treated in the public wards with the riff-raff of our cities, as they (the middle class) cannot afford to pay for private rooms. A municipal hospital could well afford to have suitable semiprivate rooms, into which the middle class could be received and in which they could be made comfortable without having their proper sense of modesty offended.

It would lead me too far to take up special municipal hospitals, such as those for the insane and those for consumptives, but the general principles I have touched on should apply to them, as well as to the hospitals for other forms of disease. We have happily advanced in our treatment of the insane, but in many parts of our country the conditions still existing in regard to the care of this unfortunate class are a disgrace and scandal, not alone to the immediate community, but also to the public at large, as demonstrating both woeful lack of knowledge on the part of the administrators and sometimes a criminal heartlessness.

It is the duty of us who know what reforms are needed to work harder to secure them, and this brings me to the point of how, after a hospital well suited to the needs of the community is once obtained, it can be properly and successfully administered.

The first essential in order to conduct a municipal hospital well is that all those connected officially with the institution should be men or women trained to fill the positions they hold, and that after they have been appointed their terms of office should be secure, so long as they remain competent and honest. Whether the superintendent should be a man or a woman, lay or professional, seems to me a question of no vital importance. For the larger municipal hospitals I think that, with rare exceptions, the best man that can be obtained is a well-trained physician who has business capacity; but there are laymen who make excellent administrators, and many women (nurses for the most part) who conduct the hospitals of which they are in charge with marked ability. A superintendent of this kind should be paid liberally. His services are worth anywhere from

$5,000 to $10,000 a year. He will, with his business knowledge, save the municipality so much annually as to make his salary seem paltry. The waste and extravagance of our municipal institutions is due largely to the fact that they are managed by both dishonest and incompetent administrators.

Your first question might well be, To whom is the superintendent to be responsible for his acts and expenditures? I reply to a board of trustees, appointed by the mayor or city council, or some municipal board. To indicate more clearly how this can be done, let me take as an example one of the largest municipal hospitals in this country—Bellevue and Allied Hospitals, New York. The mayor makes the appointments from nominations made to him by the Charities Organization Society, the Society of St. Vincent de Paul, and the United Hebrew Charities Organization. Some arrangement of this kind is necessary in a community like New York in order to safeguard the interests of all its citizens, who, as you will note, are represented by a Protestant, a Catholic and a Hebrew society. In most of our communities such an arrangement would not be necessary; but a similar, and, if possible, simpler system is advisable. The trustees should be about eight in number, for, if too numerous, they do not work well together, and, if too few, are often likely not to have the requisite judgment on matters that will come to them for decision. The trustees should, I believe, be laymen, although one physician may be admitted as a member of the board. They should be appointed from the leading citizens, men who have shown their ability in the handling of big business organizations. They should be elected for a period, say, of eight years, two being eliminated every two years and two new members appointed in their places. In this way the good government of the institution can best be assured. The two members whose term expires should not be reelected, except after a lapse of two years. Thus the development of a powerful clique is prevented. The board, having been appointed in this way, should be entirely free from all evil political influence. The trustees should be left entirely free to select the superintendent, who should be a man trained for the position; and once appointed by the board, his term should last indefinitely, under good behavior.

The board should serve in an advisory capacity, and to the superintendent should be left the real administration of the hospital, without any interference on the part of the trustees. He is responsible to them for the efficient and honest expenditure of the sums allowed to him, and his reports should be so minutely detailed that all purchases and expenditures can be readily controlled and approved. The superintendent should be absolutely free in selecting all his assistants, superintendent of nurses, matron, engineer, etc. But it is not worth while to go into the minutiae of these details here. I merely wish to impress on you that the board of trustees is an advisory board, and that the superintendent is, or should be, the true administrative head of the institution. He is responsible to the board, as they are in turn to the community.

Under a commission form of government the administration of the hospitals would be somewhat differently regulated, but it comes down to this in every instance, that the superintendent must be appointed for his ability, not for any political reason, and that he shall hold his office so long as he proves his efficiency. His term shall not depend in any instance on the varying phases of the municipality's political forces. To be an able superintendent, proficient in handling a big business organization, for that is what a municipal hospital is, a man must have special training, acquired only by service as an assistant administrator in various capacities in some large hospital. The position calls for the best men obtainable.

In this relationship it is well to call attention briefly to some of the values and defects of the civil service system. Appointments to many positions in a municipal hospital had best be made under civil service rules, but certain positions should be exempt, and these are the superintendent and any member of the medical staff or of the nursing staff. Clerks, orderlies, helpers, maids, etc., are best protected by being under civil service rules, for in this way they avoid all danger of being unjustly dismissed. The civil service system cannot by any examination select the best man for superintendent or the best nurse as head of the nursing staff. No examination can test honesty and executive ability or the other qualities which combined make a good executive officer. So for this reason, these higher positions should not be classified under the civil service system. No hospital can be administered well if the superintendent is selected by a written examination. To a superintendent, presupposedly honest and capable, elected by a board of trustees, can safely be left the appointment of his assistants to the higher positions. If it is thought well, such appointments can then be confirmed or ratified by the civil service board. This makes it impossible for the staff to suffer from the spoils system of any political party, and the fact that he has appointed his own aids, renders the superintendent able to accomplish far more than with men eligible possibly under civil service rules, but who have had no experience and have simply secured an appointment because they were bright enough to pass a not difficult examination.

To the board of trustees it remains to elect the medical staff. The board being composed of leading citizens will be readily able to secure the necessary information as to the best physicians and surgeons to compose the visiting staff, whose number should be controlled by the size and nature of the hospital. Their term of office should be until they have reached the age of 63 or 65, but they, like the superintendent, should be removable for cause.

The medical staff will form of itself the medical board, to meet with the superintendent at stated intervals, and through him to pass their recommendations to the board of trustees. The duties of the medical board are to look after the patients and their welfare. It has nothing to do with the business administration of the hospital.

The medical staff should receive suitable remuneration for their services from the municipality, which, in this way, can best secure the services of the best men. It should be a privilege and honor to be connected with a municipal hospital, just as it is to be on the staff of a private hospital, and in a few noteworthy instances it is, for example, in Boston, with the Boston City Hospital. I feel convinced that municipal hospitals are in the near future to hold a more important position in the community life, because, as I have said before, private hospitals will be rarer on account of the immense endowment required to support one properly. Hospitals are as necessary to the community as school-houses, and the community should recognize its own duties in

V. 61
1913

supplying its citizens with proper places in which to be cared for when ill or injured. With state universities and state medical schools there must follow as a natural consequence state hospitals, and the administration of these should be as free from "politics" as is the management of our best state universities.

An administration of the kind that I have hastily sketched will secure for our municipalities institutions as ably administered as are our best private hospitals.

Before closing I wish to draw your attention to one point that I shall not discuss at length, for it is an unpleasant one, but one that ought not to be overlooked in our consideration of the present status of our municipal hospitals. Their culpable inefficiency and their inexcusable deficiency in serving the community is in a large measure due to the medical profession. The best physicians have not, up to the present time, generally shown any interest in these hospitals or attempted to make them better. This is partly due to indifference to the public welfare, and partly to the desire to make money, to state it bluntly. Fortunately our indifference to the public welfare is decreasing, but we waste much time in our societies discussing trivialities as to medical ethics, etc., when we had much better be out "doing," forgetting our own little interests in fighting hand in hand with others to aid those who most need our help. Our doctors have often feared to battle for better conditions lest they might lose their positions on the staffs of municipal hospitals, and have lowered themselves to do what the political "boss" told them to do. This is a disgraceful condition of affairs. It exists throughout the country. If the profession will get together and will speak out forcibly for what they know is right and necessary, they will have the people behind them and be able to secure many needed reforms. There is not the least doubt, and it is a reflection on us as medical men, that many of the movements for social reforms which have been and are being accomplished to-day, have not been inaugurated by physicians, but by laymen and by laywomen. We have followed where we should have led.

As you will see, it has been impossible for me to do more than touch on the various points under consideration, and it has been necessary to leave much unsaid. I can only hope to have brought something new and of interest to your attention. The relation of our municipal hospitals to the community is a most important one—one that deserves deep study by all of us.

The Johns Hopkins Hospital.

ECHINOCOCCUS CYST OF THE PANCREAS

REMOVAL AND RECOVERY

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I find a twofold reason for reporting this case: first, on account of the great rarity of the condition, and, secondly, on account of the most unusual history and probable mode of infection.

An idea of the incidence of this disease affecting the pancreas may be gained from a brief review of the literature on the subject. Bergmann[1] dismisses the subject with the statement that "echinococcus cysts of the pancreas have been mentioned, but they occur with great rarity." In Keen[2] is found the following: "Hydatid cysts of the pancreas are extremely rare. Masseron was able to collect the records of only five cases. These were first recognized on the post-mortem table. Graham of Sydney writes: 'The hydatid is sometimes found in the pancreas. I have observed it as a cyst about 3 inches in diameter replacing the head of the organ.' Tricomi states, without giving references, that 'seven cases have been recorded.'"

So it may be stated that heretofore the condition has been observed seven times and that at least five of these were found on the post-mortem table, and there was no reference made concerning the other two cases.

V. S., Colon Hospital, No. 47289, a large muscular Russian, aged 35, on Isthmus seven years, came into my outside clinic, June 1, 1913, and gave a characteristic history of duodenal ulcer. The symptoms dated back for a period of nearly seven years. He was admitted to the ward on the same day and carefully observed and examined on two succeeding days. The examination elicited absolutely nothing other than the symptoms of duodenal ulcer. No tumor mass or abnormality could be palpated except a point of tenderness over the duodenum.

June 4, 1913, I operated on him for ulcer and found a comparatively large and thickened ulcer of the duodenum, the inflammatory reaction of which had extended to the peritoneal coat and caused omental adhesions at its most prominent part.

In making a casual examination of the abdomen preliminary to performing a gastrojejunostomy, I felt a cystic tumor mass, oval in shape, about 2½ inches by 3 inches, just to the left of the median line, and bulging the gastrohepatic omentum just above the lesser curvature of the stomach. Careful palpation through a hole cut in the gastrohepatic omentum revealed the mass to be situated in the upper part of the body of the pancreas and extending from near the head to the tail of the organ.

Carefully walling off the surrounding structures with gauze, I opened the cyst and evacuated its contents little by little into a large gall-stone spoon. The cyst had a very thick wall and contained a thick, creamy material, not at all similar to the clear, gelatinous material usually found in echinococcus cysts. There were no daughter cysts, either exogenous or endogenous. The cyst wall came away without any trouble and was thick, grayish, translucent, gelatinous in appearance and quite characteristic of echinococcus cysts.

Dr. S. T. Darling, chief of the board of health laboratory, and Dr. H. C. Clark, pathologist, both of Ancon, demonstrated many characteristic hooklets in the cyst wall. The cyst was surrounded by a brownish débris of putty-like consistency, which showed microscopically much cellular necrosis and degeneration, and many cholesterin crystals. The appearance suggested pancreatic digestion on the cyst wall.

The cavity was lightly curetted and packed with a narrow strip of iodoform gauze, the end of which was brought out at the upper angle of the incision through a large rubber tube. The rubber tube was stitched both to the edges of the cavity and to the skin, providing a channel through which the gauze could be removed and the cavity repacked until it closed up entirely.

For the benefit of the duodenal ulcer an ordinary no-loop posterior gastrojejunostomy was performed by suture.

A moderate amount of cellular débris came out with the packing for about ten days. The tube was withdrawn and the patient's recovery was uneventful, except for a slight pancreatic fistula which persisted for five weeks.

During his convalescence, I gained from him the following history. He was born in Odessa, Russia, thirty-five years ago. For two years he was robust and healthy; then he sickened and had a disease known as "dedor" (marasmus?) According to the practice of that country then, it was customary to treat children suffering from this ailment by taking them to the abbatoir, stripping them and burying or cover-

1. Bergmann: System of Surgery.

2. Keen: Surgery, iii.

ing them all over except the face with the entrails of slaughtered animals, or the stomachs were cut open and the patients covered with fresh tripe. The treatment was repeated daily, and this was the treatment given the patient, repeated daily for many days.

During his childhood and manhood he has been singularly free from contact with the lower animals that might bring him infection. At an early age he was apprenticed to a machinist. He left Russia when he was 18, and since that time has never been in any part of the world in which echinococcus disease was endemic. He is a man of more than ordinary intelligence, cleanly and careful in his personal habits and able to give a clear and concise account of his life and mode of living. It is improbable that he contracted the infection through any carelessness or ignorance on his part.

This brings us to the consideration of the probable time and manner of infection in this case. For the past seventeen years —since leaving Russia—he has led a cleanly life in a part of the world where echinococcus disease is very rare if not entirely unknown. Consequently, I believe we may infer that the chance of his infection during the past seventeen years was very slight.

Concerning the first eighteen years of his life, conditions were somewhat different. He lived in a country where echinococcus disease occurs and we must admit the possibility of infection taking place at any time; yet he gives a history of his earlier years that would seem to make the likelihood of infection slight. His home had no domestic pets, he never played with cats, dogs, sheep or other domestic animals that might transmit the infection, while his trade, that of a machinist, had a tendency to keep him away from the most common sources of infection.

So we are brought again to consider the chances of infection at the age of 2 years when he was buried repeatedly in the entrails of slaughtered animals, and probably beyond a doubt some of them were of cattle or sheep suffering from hydatid disease. The exceedingly close contact with infection which would be brought about by this treatment would seem to make infection not only possible, but probable. Infection probably occurred by ingestion of the ovum and direct migration of the ovum through the wall of the stomach into the pancreas, where it began to develop.

By the appearance of the cyst I would say it had probably been dead for a long time, perhaps a number of years. While the duration of this cyst is merely a matter of conjecture, the history and circumstances are such that one may say there could well be no stronger evidence to a duration of thirty-three years.

The cyst was in a position in which palpation was impossible and percussion would reveal nothing. As it did not interfere with the function of at least part of the pancreas, I believe that it gave rise to no symptoms which might even lead us to suspect the trouble and would be found only on the operating-table or at necropsy.

I wish to thank Colonel W. C. Gorgas for permission to publish this paper.

Hexamethylenamin Used to Preserve Caviar.—Our vice-consul at Moscow writes that the authorities have been petitioned by the Astrakhan Chamber of Commerce to sanction the use of hexamethylenamin as a preservative of caviar until a more satisfactory preparation is found. Of about 1,400,000 pounds of caviar obtained each year by the Astrakhan fisheries, approximately 75 per cent. is exported, and the only preservative thus far found which will keep the caviar fresh is hexamethylenamin. This substance is added to the caviar in the proportion of 1:1300 and therefore, it is claimed, is not present in amounts sufficient to be injurious to health. Approximately 100 pounds of hexamethylenamin are used for this purpose annually.—(*Consular Reports*, Nov. 6, 1913.)

A NEW OPERATIVE TREATMENT FOR SPASTIC PARALYSIS

PRELIMINARY REPORT

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AND
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NEW YORK

The purpose of this article is to offer a new operative treatment in selected cases of spastic paralysis. We have now a series of only twelve cases to report, but the results have been so gratifying and even startling, that we feel justified in making a report of the work that has been done up to the present time. We do not assert that the improvement in all of our cases will be a permanent one (sufficient time has not yet elapsed since the operations), and yet we do not see why the improvement should not continue to be more and more marked as the children grow older.

Spastic paralysis is a condition which frequently results from a lesion of the brain occurring before birth, during birth or shortly after birth. It is characterized by more or less complete paralysis of the part affected, and is associated with a stiffness or spasticity depending on the extent of the involvement of the pyramidal tract; this hypertonicity produces muscular contractures and deformities, usually flexor in type, with a corresponding overstretching of the opposing muscular groups, usually the extensors. In mild cases, however, the spasticity may be so slight as to cause little or no deformity, but merely an awkwardness of the part affected. Frequently athetoid movements of the arms and legs may be observed, and epileptiform attacks, commonly of the Jacksonian type, may occur.

In a large percentage of cases as the child grows older, not only do the spasticity and its resulting contractures increase, but also the mentality of the child becomes impaired, and this mental impairment continues until the child may be considered a defective, or still further an imbecile, and only too frequently an idiot.

The most common lesion of the brain producing spastic paralysis is that of intracranial hemorrhage of the new-born. It is usually due to a rupture and tear of either the longitudinal sinus or of its venous tributaries, and of vessels overlying the cortex of the brain, causing a hemorrhagic clot to form over the cerebral cortex. According to the extent and pressure of this hemorrhage over the cerebral cortex, we find clinically the signs of such interference of the pyramidal tract—a spastic diplegia, paraplegia, hemiplegia and the milder forms of spastic paralysis. These lesions form 70 per cent. of the cases of spastic paralysis, whereas agenesis and maldevelopment of the cerebral cortex and the cases of meningo-encephalitis complicating measles and scarlet fever constitute most of the remaining 30 per cent.

The operations which have been used in the past and are still being used to improve the conditions of spastic paralysis, namely, tenotomies, tendon lengthenings, sections of the posterior nerve roots, alcohol injections of peripheral nerves, nerve resections and other operations, are, in our opinion, of only temporary benefit, and we have yet to see a case in which the spasticity has not returned, in some degree, within one year. In all of our cases treated by the operations just mentioned during the past two and one-half years, the spasticity began to reappear within one year after operation.

V. 61
1913

Tenotomies, besides being unsurgical, are unsatisfactory. Tendon lengthenings (Hibbs' operation) alone are satisfactory in only very mild cases. Foerster's operation for sectioning of the posterior nerve roots of the spinal cord is advocated merely to lessen the irritability and the instability of the cortex of the brain by decreasing the number of afferent stimuli reaching the brain through the posterior nerve roots of the spinal cord and also to affect the reflex mechanism of the spinal cord. Besides being a rather formidable and long operation for a child, the lessening of the spasticity is only temporary, few cases being reported improved longer than one year. Our experience with seven cases has been the same. The injection of alcohol into the peripheral nerves (the Allison and Schwab operation) produces immediate paralysis and a temporary relief from spasticity; in our experience of thirty-one cases, however, the spasticity has returned within one year. With nerve resections (Stoffell's operation), we have had no experience. These operations, however, do not in any way "get at" the primary cause of the spastic paralysis, namely, the lesion of the brain, but are merely peripheral operations to relieve the spasticity temporarily, in the hope that, before the recurrence of the spasticity, sufficient power will have returned to the opposing muscular groups to reestablish the muscle balance. Little, if anything, has been done to improve permanently the condition of spastic paralysis, and we offer our observations in the hope that they may lead to a more satisfactory solution of the treatment of these pitiful cases. Our attention was first centered on the importance of relieving the increased intracranial pressure as a means of lessening the spasticity and improving the mentality of these children, by a decompression operation performed by one of us.

REPORT OF CASES

CASE 1.—The patient, a child, aged 9, with a left spastic hemiplegia of the flexor type, was moribund at the time of operation, having been in status epilepticus for three days, with little or no nourishment. Artificial respiration and oxygen were being used. The intracranial pressure was very high as shown by an ophthalmoscopic examination and by the signs of medullary compression, and therefore a decompression was performed in the hope that a lowering of the intracranial pressure would afford the child its only opportunity to recover. The usual incision was made. The dura was very tense, and when it was incised, cerebrospinal fluid spurted to a height of 4 inches. Signs of an old cortical hemorrhage were found, and 2 cm. above the upper bony margin of the decompression opening was a rather hard, fibrous tumor, the size of an English walnut. As the condition of the child was precarious, it was thought wiser to remove the tumor at a subsequent operation. The child made an excellent recovery; the spasticity, however, lessened to such a degree that he can walk now with only a slight limp, the heel touching the floor; the left arm and the left hand are now being used for the first time in his life. The after-treatment is being carried out now with the cooperation of the child—something impossible before operation. As the child has improved so much, the parents have not yet consented to the second operation for removal of the tumor.

CASE 2.—The patient, a child of 13, with a history typical of intracranial hemorrhage of the new-born, was a spastic hemiplegic, and on ophthalmoscopic examination, signs of intracranial pressure were observed. Remembering the improvement of the preceding case following a mere decompression operation, we advised and obtained consent for the operation merely to relieve the intracranial pressure in the hope that the spasticity would be lessened and the mentality improved. Similar improvement followed as in the preceding case, although a lengthening of the Achilles tendon was deemed advisable and it was performed the following week.

Since then we have performed the decompression operation in twelve selected cases in all and practically the same improvement has resulted in each case. We have selected for operation only the extreme types of spastic cases.

METHOD OF PROCEDURE

In those cases of spastic paralysis of the hemiplegic, paraplegic or diplegic type, with a definite history of difficult labor with or without the use of instruments, in which, on ophthalmoscopic examination, signs of intracranial pressure are shown in the dilated retinal veins and a blurring and haziness of the optic disks, especially of their nasal halves, a large right subtemporal decompression is performed to relieve the intracranial pressure. If the intracranial pressure is extremely high and remains high after operation, a left subtemporal decompression is performed the following month, the operative recovery requiring only a week to ten days.

The method of dealing with the various pathologic lesions found at operation will be discussed in detail in the more complete report to be published later. The usual findings are definite cystic formations resulting from a cortical hemorrhage occurring at birth. The decompression operation is performed merely to offset the effects of the pressure of this hemorrhage with cystic formation, and the resulting spasticity and mental impairment.

The after-treatment consists in the correction of deformities by tendon lengthenings or stretchings of the contracted muscles, the maintenance of corrected positions through the employment of especially adapted and properly fitting braces, and skilled massage in conjunction with short applications of galvanism and faradism, particular attention being given to the weakened and overstretched muscle groups. A careful, systematic course in muscle training is carried on daily.

The improvement in our cases selected for operation has been so marked—not only a lessening of the spasticity, but a definite amelioration of the mental condition of the patient—that we believe a cranial decompression is indicated in those cases of spastic paralysis showing intracranial pressure by the ophthalmoscopic examination; of those cases of spastic paralysis which we have examined, about 60 per cent. have shown signs of intracranial pressure, and are, therefore, in our opinion, cases that can be very much improved. This operation is not a formidable procedure for one trained in neurologic surgery; all of our patients have improved and we have had no deaths. The anesthetic should be administered by an expert.

One of the most important advantages of this operation is that the child improves mentally to such a degree that we obtain the cooperation of the patient in the carrying out of the after-treatment.

Naturally, we do not believe that all cases of spastic paralysis should have a cranial decompression; in some mild cases, tendon lengthenings alone are sufficient, and this is especially true in the absence of mental impairment. But those selected cases of spastic paralysis, particularly of the hemiplegic and of the paraplegic types, which show signs of increased intracranial pressure by an ophthalmoscopic examination, are the cases that can be very much improved by such a procedure. The cases of agenesis and maldevelopment of the cortex of course cannot and do not show signs of increased intracranial pressure, and are therefore easily excluded by an ophthalmoscopic examination.

A more complete report will be published later.

20 West Fiftieth Street—104 East Fortieth Street.

IMPROVED TECHNIC FOR BLOOD-COUNTS: RAPID METHOD FOR SECURING EXACT AMOUNT OF SUSPENSION

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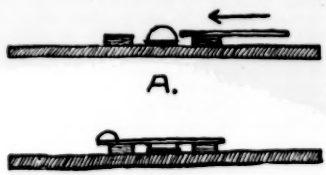
Many clinicians regard total white or red counts as an arduous and lengthy procedure. After noticing that most of their time has been consumed in trying to drop the exact amount of suspension on the counting-chamber, I feel justified in calling attention to the technic which I have found for many years both rapid and exact. It may be original or I may have observed some one else doing the same thing, but so far as I know it is original, and none of the text-books on laboratory technic covers the point in question, being content

Fig. 1.—Manner of holding cover-glass.

to say: "A small drop of the solution (?) is carefully placed on the center of the counting-chamber, that is, over the ruled scale. The cover-glass is immediately adjusted before the corpuscles can sink, and pressed down at the margin until Newton's rings appear. If these do not remain after removal of the pressure, the preparation *must be made over again.*"

I have observed some clinicians make as many as five or six preparations before obtaining satisfactory results, which can be readily obviated in a single preparation by adhering to the following technic:

After the usual shaking of the pipet, and expulsion of a few drops of the suspension, a good sized drop is placed on the counting-chamber, no particular attention being paid to its size. The cover-glass, which has been previously cleaned, is then rapidly grasped between the thumb and index-finger of the right hand (Fig. 1 and Fig. 2*A*), while the slide is steadied on the table with the left hand. While firm pressure



A.

B.

Fig. 2.—Horizontal view of counting-chamber, drop of suspension and cover-glass; *A*, before sliding cover-glass through drop. *B*, after sliding cover-glass through drop.

is exerted on the cover-glass it is rapidly slid across the counting-chamber, through the drop of suspension on it. The cover-glass will cut through the drop at exactly 0.1 mm. The excess from the drop will rise on top of the cover-glass and jump across the moat (Fig. 2*B*). Newton's rings will be obtained in each instance. The drop on top of the edge of the cover-glass is wiped or soaked up with the point of a towel or blotting-paper and the preparation is completed.

Precautions to be observed are:

1. Clean cover-glass.
2. Perfectly dry moat.
3. Rapid and perfectly horizontal motion of the cover-glass.

108 Baronne Street.

Therapeutics

PUERPERAL INFECTION

(*Concluded from page 1901*)

TREATMENT OF PUERPERAL INFECTION

If some form of puerperal infection has occurred, of course the first decision is as to whether or not it is local or general. In a local or pelvic disturbance with more or less rise of temperature but without any symptoms of general infection, the treatment should be conservative and more or less symptomatic. The bowels should be carefully attended to, the diet should be simple but sufficient, large amounts of water should be drunk to dilute all the secretions, and Fowler's position should be used more or less continuously to encourage drainage. Again, vaginal douches generally should not be given.

It has been shown that the action of yeast increases leukocytosis and more or less inhibits intestinal intoxication; therefore its administration is good treatment in most infections and is very valuable in pelvic infections. From one-sixth to one-fourth of an ordinary compressed yeast-cake, dissolved in a glass of water, should be given three times a day, unless it causes too much looseness of the bowels. Vaginal douches of yeast solutions have been used and are said to be of value.

Of course the vaginal discharge, or, better, the uterine secretion directly obtained, should be studied bacteriologically to decide, if possible, what infection is present. According to Watkins,[1] the bacteriologic examination of vaginal and uterine secretions is of relatively small value, as the results are often uncertain and misleading. Blood-cultures are the only means at present of accurate diagnosis of the variety of infection. The result of this examination may suggest the use of an antiserum or a vaccine, if either be deemed advisable. The blood should also be examined for pathogenic bacteria.

If a parturient patient has a sudden chill more or less severe, with a rapid rise of temperature which persists in some degree and is not intermittent, and a rapid pulse, puerperal infection has probably developed, unless some serious condition like pneumonia is about to occur. Other symptoms of this general streptococcic infection are: a diminished amount of lochial discharge, perhaps even without odor; more or less tenderness in the pelvic region; a coated and perhaps dry tongue; bad, perhaps septic, breath; scanty urine; severe lumbar pains; tympanites; at times yellowing of the skin, and later, if the infection progresses and becomes serious, possibly delirium. The progress of the fever is that of a typical septicemia. There may be irregular chills, profuse sweatings and more or less leukocytosis. If the lungs, breasts, kidneys and throat have been excluded as the location of the cause of the temperature rise and onset of symptoms, and if the uterus is tender and enlarged, as it generally is, acute puerperal streptococci infection is in evidence.

The insistence here should be on the fact that because there is a septic puerperal infection, it is not forthwith an indication for a uterine curettage, or intrauterine or vaginal douching or any other severe operation. The general treatment just outlined for a more localized simple puerperal pelvic infection should be carried out, with more or less tepid spongings to control the high tempera-

1. Watkins, T. J.: Puerperal Infection, Am. Jour. Obst. and Dis. Women and Child., September, 1913; abstr., THE JOURNAL A. M. A., Oct. 18, 1913, p. 1485.

V. 61
1913

ture. The bowels should be freely moved each day, large amounts of water should be drunk and perspiration should be encouraged, though the body should be kept clean by frequent warm spongings and alcohol spongings. The outdoor treatment in Watkins' opinion[1] is the most valuable remedy known as yet in the treatment of puerperal infection. The beneficial effects of that treatment in his cases have been very noticeable, especially as regards improvement in appetite, sleep, temperature and pulse.

The heart may be stimulated by infrequent doses of strychnin, not more than 1/30 grain once in six hours, with caffein (perhaps best as coffee) twice in twenty-four hours, if no delirium is present. Camphor is another valuable cardiac and nervous stimulant and 20 or 30 drops of the official spirit of camphor, given properly diluted once in four to six hours, is good treatment in these cases. In emergencies, one, two or three injections of a sterile ampule of camphor solution in oil hypodermically at intervals of an hour will, at times, tide over cardiac depression. Alcohol may or may not be indicated, depending on whether or not the patient can take other nourishment. It should not be used as a stimulant, and the dose should not be large. Whether ergot or hydrastinin should be given must be decided in each case. The ergot will improve the tone of the circulation, but may cause the uterus to contract more than is desirable. Digitalis should not be used except, perhaps, early in the disease, as the inflamed or injured myocardium which results from an infection must not be hurt by the strong contractions which are caused by this drug.

Fowler's position should be maintained to promote drainage, often with the use of uterine retention tubes, and the Murphy drip may be advisable.

The diagnosis of a streptococcic infection having been made, the choice of one or more of the following specific treatments are available:

1. Antistreptococcic serum.
2. A stock streptococcic vaccine.
3. An autogenous vaccine developed from the uterine secretion.

Antistreptococcic serum has in some hands shown wonderful results; in other hands it has failed. It should be used, if at all, in large doses, as it does not seem to do any harm. It often, however, is not at all antitoxic to the bacterial infection from which the patient is suffering.

If vaccines or bacterins are to be used, they should be used early, and the stock vaccine selected must be polyvalent, that is, it must represent several strains of streptococcus, with the hope that one of them will be the one that has infected the patient. Later, these vaccines are not valuable, as then enough of such stimulation is going on in the patient. Therefore, in the advanced or later stages of the infection an antistreptococcic serum, if it were antitoxic to the germ from which the patient is suffering, would be of great value.

If an autogenous vaccine is to be used, it should be produced early in the infection (such a bacterin, in emergencies, can be developed in from eighteen to twenty-four hours) and immediately given. More than one or two repetitions of such an autogenous vaccine at twenty-four-hour intervals would be doubtful therapy, as in an acute infection such as puerperal septicemia the blood is soon producing all of the antibodies that it can. This is a very different process from a slow-going acute or chronic infection in which revaccinations are often of great value.

As these infections are not malarial, unless a malarial germ is discovered in the blood, there is no excuse for administering quinin. If the diet is without meat, iron should be given, and is, perhaps, best administered in 5-drop doses of the tincture of ferric chlorid in fresh lemonade, given three or four times in twenty-four hours. Also the need of the body for lime should not be forgotten and simple lime-water may be used, or calcium glycerophosphate, in powder, in 0.3 gm. (5 grain) doses, three times daily.

If more or less serious uterine hemorrhage occurs, or if the discharges from the vagina are exceedingly fetid, showing decomposition products in the uterus, it may be necessary to institute some operative interference. Perhaps the safest procedure is to administer an anesthetic and to explore and clean the uterus with the finger properly protected. Curettage of an infected uterus is serious and may cause serious results, to say nothing of the danger of perforating the softened uterine wall. It may be repeated that except for serious hemorrhage it is probably rarely advisable to clean out the uterus during septic infection. Decomposition will generally cause a loosening of foreign and pathologic tissues from the walls of the uterus, and they will generally be passed out through the vagina. Also, it should be remembered that in this septic infection the uterine muscle itself is more or less inflamed and softened, and contains, as well as the surrounding lymphatics, more or less of the infecting germ. Also, when the infection is well in progress the bacteria are probably in the blood. Severe local measures, therefore, do not eradicate the disease and may open up other avenues of absorption. It may even be wise, in the presence of uterine hemorrhage, to pack the vagina first to see if the loosening membrane or piece of placenta will come away without actual uterine interference.

It should be urged that intra-uterine injections and douches are rarely, if ever, indicated, are generally dangerous and may do serious harm. Vaginal douches in septic infection, while not so dangerous, may also cause harm and should generally be omitted. In other words, the pressure in the uterine and vaginal cavity should always be negative to the pressure on the other side of the blood-vessels and lymph-vessels to promote exudation into the parturient canal rather than absorption from this canal. There is danger, also, in intra-uterine injections of forcing septic matter into the fallopian tubes. If, later, a pelvic mass is found, whether hematoma or abscess, hot vaginal douches may be allowable and of value in promoting absorption or in hastening localization for vaginal incision and evacuation.

If there is more or less peritoneal inflammation and, therefore, pain, morphin is indicated, as a patient should not be allowed to suffer pain, for depression from acute pain may be the last straw to stop an already weakened heart. Local applications to the lower part of the abdomen in the shape of turpentine stupes or alcohol fomentations may sometimes be of value as counterirritants. Warm applications, as flaxseed poultices, may give some comfort and prevent the necessity of giving much morphin. They often cause a relaxation of the muscular tissues and lessen the irritation and tension. Of course such treatment is purely symptomatic and entirely non-specific. If serious infective localization occurs in the pelvis, more serious operative interference may be necessary.

In recovery from this very dangerous infection the convalescence is long and tedious, and months generally elapse before there is a return to normal health.

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SATURDAY, NOVEMBER 29, 1913

THE REINSPIRATION OF EXPIRED AIR

It is evident to the most superficial observer that under ordinary conditions of breathing some of the expired air must be drawn back again into the lungs. A few experiments to determine the proportion of the breath that is reinspired have been made during the last fifteen years, but no really thorough study of the question was carried out until the recent work of Crowder.[1] This investigator has studied by ingenious methods the effect of such factors as change of position, body motion, different types of breathing and different temperatures, and in addition has determined the conditions that obtain on the sleeping-porch and in the open air. Nasal breathing is the type especially studied; in mouth-breathing there is little or no reinspiration.

The conclusions that may fairly be drawn from Crowder's work are that (1) a person remaining quiet and indoors will immediately rebreathe from 1 to 2 per cent. of his own expired air; (2) when lying in bed the percentage is higher, rising to from 4 to 10 per cent., depending on the position assumed while sleeping. "Nor does sleeping in the open insure pure air for breathing. The same influences here produce the same relative results that they do inside. When one buries his head between pillow and bedclothes for the sake of warmth, reinspiration is inevitable, and it is not necessarily small in amount." In addition, it must be noted that at each inspiration we reinhale not only some of the air just exhaled, but also the air contained in the nose and larger bronchi — the so-called "dead-space" air. This may amount to one-third of the whole volume in quiet inspiration and not less than one-tenth in deep breathing.

The significance of this study in connection with questions of ventilation is obvious. Since even under the most favorable conditions we cannot avoid drawing back into the lungs some of the air that has just passed out of them, not much importance can be attached to the slight variations in carbon dioxid content which occur in the air of rooms. A little deeper breathing seems to be the utmost physiologic effect that could be caused. These experiments also furnish additional evidence against the theory that efficient ventilation consists in the chemical purity of the air, in its freedom from "a toxic organic substance." Even were a poisonous protein substance present in the expired air—a fact no experimenter has yet been able to demonstrate—the human organism under every-day conditions is apparently well able to adjust itself to the reinhalation of this hypothetic substance, since a considerable quantity of the expired air is always taken back into the lungs.

The failure of many expensive ventilation systems to confer the comfort expected from them has been due to neglect of such facts as those here cited. The attempts to "renew" the air by displacing a certain volume at regular intervals were primarily based on the theory that good ventilation was due to freedom from the chemical constituents of expired air. We now know that this practice did not achieve the end aimed at, because the essential factors in good ventilation are not freedom from carbon dioxid or from a mythical organic poison, but are coolness, dryness and motion. Crowder's work brings the old and new theories of ventilation into sharp contrast. "The theory of displacement does not sufficiently take into consideration that all animals possessing lungs ventilate them on a very simple principle of dilution; nor does the pure air theory sufficiently consider that the air of the lungs always remains highly contaminated with their own excretory gases, and that there is such an effective barrier as the dead space against the lowering of the contamination."

1. Crowder, Thomas R: The Reinspiration of Expired Air, Arch. Int. Med., October, 1913, p. 420.

ACIDOSIS AND METABOLISM IN DIABETES

In the course of their elaborate studies on metabolism in diabetes, carried out at Boston in the Nutrition Laboratory belonging to the Carnegie Institution of Washington, Benedict and Joslin[1] have reached the significant conclusion that the exchange of matter and energy is distinctly augmented in the course of this disease. This heightened metabolism is not attributable to psychic influences, excessive muscular exertion or increased protein decomposition. Contributory causes like fever and the factors just mentioned were carefully excluded. The tendency toward increase in metabolic exchange appears to parallel the alteration in the intensity of the diabetes.

Acidosis and the attendant production of the compounds leading to ketonuria are a characteristic of the severer types of diabetes. It seems not unreasonable therefore to connect the acidosis with the simultaneously augmented metabolism. Ketonuria can readily be induced in perfectly healthy subjects by the complete withdrawal of carbohydrate from the diet and likewise by starvation. It is only logical, therefore, to ascertain the effect on the metabolism in normal man of an acidosis thus artificially induced. New experiments con-

1. Benedict, F. G., and Joslin, E. P.: Metabolism in Diabetes, Publications of the Carnegie Inst. of Washington, No. 135; A Study of Metabolism in Severe Diabetes, ibid., No. 176.

V. 61
1913

ducted likewise in the Nutrition Laboratory at Boston[2] have given clear-cut evidence of the stimulation induced in this way.

In the experiments here referred to the quantities of beta-hydroxybutyric acid found in the excreta during the period of increased metabolism did not exceed 5 gm. per day. This is far outdone by diabetics, who may show an output of more than 50 gm. with no greater rise in the metabolism than the normal subjects showed in the presence of the smaller amount of acidosis products. It is therefore conceivable, as Benedict and Joslin point out, that the continued production and presence of beta-hydroxybutyric acid as it must occur in the organism of the diabetic develops a degree of tolerance to its specific metabolism-stimulating effect. Whether the latter is in reality a direct action of the circulating acid on the tissue-cells or is due to the diminished alkalinity of the blood remains to be learned. In fact, for the present one is not justified in going beyond the demonstration of the usual simultaneous manifestation of acidosis and heightened metabolism, for in cases of prolonged starvation it has been missed.

In accord with clinical experience the Boston investigators offer the significant reminder that an acidosis of moderate intensity induced by the sudden withdrawal of carbohydrates is more dangerous than a decidedly more severe acidosis attending the more gradual initiation of a carbohydrate-free regimen. The sudden withholding of carbohydrates, which is liable to occur when a diabetic patient enters a hospital or has a change of physicians, may precipitate an acute onset of coma. It is surprising, we are told, how small may be the urinary output of organic acids in such cases. On the other hand, patients with severe diabetes who have been subjected to a strict non-carbohydrate diet for long periods may manifest an acidosis involving 50 gm. of beta-oxybutyric acid in the daily urine without any disturbances directly associated therewith. The sudden complete withdrawal of carbohydrates is always a questionable procedure in diet regulation.

2. Benedict, F. G., and Joslin, E. P.: Ueber den Stoff- und Energieumsatz bei Diabetes, Deutsch. Arch. f. klin. Med., 1913, cxi, 333.

THE PULSE-RATE DURING SLEEP

The extensive records obtained in the course of the past few years at the Boston Nutrition Laboratory of the Carnegie Institution of Washington have made it evident that there is a close and almost direct relationship in both man and animals between the pulse-rate and total metabolism. If this is true it becomes apparent that under normal circumstances the pulse-rate may be a sort of index of the extent of the chemical changes taking place in the body. Every one realizes from personal experience that muscular movements, which, of course, occasion an increase in metabolism to liberate the energy essential for their performance, are attended with a more rapid heart-beat, the rate varying with the intensity of the exercise performed. The published observations available show, however, that this response of the pulse is more perfect than might be suspected. Not only the more vigorous activities but even unsuspected ones exert detectable influence on the pulse-rate. We recall, for example, the records of Benedict and Talbot[1] on nursing infants. The relationship between carbon dioxid production, pulse-rate and the muscular movements of infants as recorded by graphic methods was very striking. In comparing the pulse of infants of different ages, for instance, a very young baby and an older one, it was noted that there is much less stability of the young babies' pulses than those of the older ones, and a slight motion causes more marked elevation of the pulse. The minimum average pulse-rate depends on the age and type of the baby, and no general rules can be made, because each baby is a law unto itself. The average of the babies in the first week of life was 120 beats per minute and that of the older babies somewhat slower. The average minimum of one baby 3 months old was about 90 beats per minute, and that of another baby of 3 months 100 per minute. Slight movements which were visible practically always elevated the pulse-rate from ten to twenty beats, while violent exercise, such as nursing or crying, increased the pulse-rate from fifty to sixty beats. When the pulse was increased for twenty minutes, as it was during a nursing, it took about ten minutes after the exercise was finished for the pulse-rate to reach the normal. Sometimes it dropped below normal after continued exercise, and remained there for from three to five minutes. The pulse, therefore, did not reach the normal line in some instances until fifteen minutes after the muscular exercise was finished.

The interpretation of the pulse-rate in relation to metabolism at once suggests the bearing of this factor in the daily routine of adult man. No clinical observations are more frequently repeated than those on the pulse-rate, a symptom which every physician continually makes use of at all times of the day. There are, nevertheless, few statistics available respecting the pulse in sleep, a period when muscular activity and metabolism are at a low ebb. Data on this subject have been obtained by Dr. Klewitz in Moritz' clinic at Cologne.[2] The average pulse-rate of persons free from heart defects was fifty-nine per minute during sleep and seventy-four when awake, the subjects in either case being at rest in bed. The variations in the pulse-rate are far less marked than during waking rest. That the lowering of the pulse-rate during sleep is in truth merely the expression of a more decided condition of perfect restfulness is evidenced by the fact that even during waking hours figures as low as those noted in sleep could be observed, provided the degree of rest was as perfect as can be maintained by a person awake. During sleep in the daytime the pulse-

1. Benedict, F. G., and Talbot, F. B.: Some Fundamental Principles in Studying Infant Metabolism, Am. Jour. Dis. Child., September, 1912, p. 129.

2. Klewitz, F.: Der Puls im Schlaf, Deutsch. Arch. f. klin. Med., 1913, cxii, 38.

rate is scarcely decreased below that which obtains at rest in waking hours.

From a clinical point of view it is interesting to note that the conditions just recited also exist in patients with valvular defects in whom the cardiac deficiency has become compensated; but when the latter is not the case the pulse-rate is not so characteristically decreased in sleep. The extent of the decrease in the heart-rate is in a way indicative of the degree of compensatory changes which has been established, so that the comparison of the pulse-rate in sleep and in waking hours may have some prognostic value. Irregularities of the heart, such as extrasystoles, etc., do not disappear in sleep. Tachycardia due to organic defects is likewise not obliterated by sleep; but when the accelerated heart-rate is associated with purely nervous causes, the tachycardia disappears in sleep. Here again the determination of the pulse-rate may furnish a help in differential diagnosis.

THE CONSEQUENCES OF INTESTINAL OBSTRUCTION

The occasion of the severe symptoms and frequently fatal outcome of high intestinal obstruction and the cause of death from volvulus have of late attracted unusual attention from surgeons and other investigators. Certain facts seem clearly established. High loop obstruction in animals, for example, may cause very rapid death, in from twenty-four to sixty hours, as a rule, even when the loop contains no food material or secretion from the stomach, liver or pancreas. Low loops of similar nature in the region of the ileum appear to be less rapidly productive of fatal results. To quote a few illustrative instances, Bunting and Jones have found that in rabbits obstruction of the duodenum is more quickly fatal than obstruction of the pylorus or of the ileum. Whipple, Stone and Bernheim, among others, have noted that dogs having closed duodenal loops die with symptoms like those of patients suffering from volvulus or high intestinal obstruction. It would take us too far to attempt to review here the important contributions which have been made to the solution of the problems concerned with intestinal obstruction.[1] Some of the debated points seem now to be definitely settled. Thus, among the classic explanations of death in obstruction, infection was early given a prominent place. Hartwell and Hoguet[2] have demonstrated by bacteriologic examination on dogs with high intestinal obstruction that death may result without demonstrable invasion of the blood-stream, peritoneum, liver or spleen by organisms. This and other work practically rules out the infection theory. Murphy (F. T.) and Vincent have championed the view that interference with the circulation of the obstructed intestine is the vital factor in the symptoms of ileus; but we believe that there is abundant evidence that death may occur when the intestinal obstruction is uncomplicated by any circulatory interference. Obviously damage to the intestine produced by disturbances of the circulation, particularly venous obstruction, leads to more fulminant and disastrous reactions than simple obstruction alone; but the circulatory factor is incidental and contributory here, and not the determining issue.

A further explanation of the cause of death in obstruction postulates an intoxication from within the lumen of the bowel itself. The hypothetic toxic substance has been referred by some to the activity of bacteria and to noxious substances arising within the intestinal lumen, whereas others postulate the secretion of a poisonous product by the glandular structures and walls of the alimentary tract. It is about this toxin theory that a vigorous scientific debate has lately been carried on by American investigators. That the poison is derived from bacterial life in the obstructed loops is no longer prominently defended. The bacterial flora of the upper alimentary tract is relatively scanty about the duodenum and upper jejunum and becomes much more luxuriant toward the large intestine. The more recent researches agree in showing that the part of the intestine poorest in bacterial inhabitants is that which yields most rapidly fatal results when obstructed.

There remain for consideration the variously conceived hypotheses involving the production or secretion of a poisonous substance by the mucosa itself. Draper believed that the "toxin" is contained in the duodenal secretion and is normally neutralized by the secretion of the mucosa of the jejunum and ileum. Consequently in obstruction of the upper bowel the harmful outcome was due, on this theory, to the inability of the antidotal product of the lower portions of the intestine to offset the duodenal poison. This purely hypothetic explanation has been made improbable by experiments of Whipple, Stone and Bernheim in which duodenal loop fluid was found to lose none of its toxic character when mixed with normal intestinal mucosa. Bunting and Jones have reached the conclusion that, in rabbits at least, the duodenal mucosa alone secretes the poison, and that it comes from the glands of Brunner and is responsible for the death of animals with obstruction.

The most ardent advocates of the toxin theory are Whipple, Stone and Bernheim. From the results of very elaborate studies they have come to the conclusion that the mucosa of closed duodenal loops, the latter employed because they induce the typical symptoms of death from high obstruction, must form a poisonous sub-

1. Compare, for example:
Kukula: Arch. f. klin. Chir., 1901, lxiii, 773.
Allweck, V.: Ibid., 1902, lxv, 569.
Clairmont, P., and Ranzi, E.: Ibid., 1904, lxxiii, 696.
Draper-Maury, J. W.: Am. Jour. Med. Sc., 1909, cxxxvii, 725.
Murphy, F. T., and Vincent, B.: Boston Med. and Surg. Jour., 1911, clxv, 984.
Hartwell, J. A., and Hoguet, J. P.: Am. Jour. Med. Sc., 1912, cxliii, 357; THE JOURNAL A. M. A., July 13, 1912, p. 82.
Stone, H. B.: Bernheim, B. M., and Whipple, G. H.: Bull. Johns Hopkins Hosp., 1912, xxiii, 159.
Bunting, C. H., and Jones, A. P.: Jour. Exper. Med., 1913, xvii, 192; 1913, xviii, 25.
Whipple, G. H.: Stone, H. B., and Bernheim, B. M.: Ibid., 1913, xvii, 286, 307.
Hartwell, J. A.: Ibid., 1913, xviii, 139.
2. Hartwell, J. A., and Hoguet, J. P.: Am. Jour. Med. Sc., 1912, cxliii, 357.

V. 61
1913

stance which is absorbed from it and accounts for the fatal issue. The material from such loops can be prevented from containing bile, pancreatic juice, gastric juice or digestion products, any of which might independently have been responsible for the intoxication if perchance owing to obstruction they were absorbed as such. The toxic substance is not absorbed from the normal intestinal tract. Destruction of the mucosa prevents the formation of the toxic substance, thus furnishing the final proof that the mucosa is the essential factor in the elaboration of the alleged poisonous material.

These far-reaching conclusions, charging hitherto unsuspected potencies for harm to the intestinal lining, have been vigorously opposed by Hartwell and Hoguet, who have pointed out that animals with obstruction of the lower duodenum vomit profusely. The urine shows marked abnormalities when compared with the kidney secretion in simple starvation; but if a quantity of normal saline slightly in excess of the total loss of water in the urine and vomitus be given daily in the form of hypodermoclysis, the animals return to the conditions characteristic of simple starvation and may live in excellent health for long periods. According to these investigators, therefore, the important element in the development of the toxic symptoms seen in intestinal obstruction is the hitherto unappreciated loss of water. The symptoms of intoxication are those resulting from tissue disintegration following this loss. When strangulation complicates obstruction, however, these facts do not suffice to explain the outcome.

In his most recent contribution to the subject, Hartwell[3] insists that simple stagnation does not yield a poisonous substance. According to him the only poison present in intestinal obstruction arises from the damage secondary to the obstruction, and not from the stagnation of intestinal contents or an altered function of a normal-appearing mucosa. In explanation of the experience of the opposing school Hartwell points out that in their experiments injury to the intestinal wall has been common, as judged from the necropsy records, and that in the absence of such damage there is no primary toxemia.

Clinical intestinal obstruction is almost invariably associated with a damaged intestine, and consequently it is fair to assume that a poison is produced with this condition. The valuable experimental work in which so many enthusiastic investigators have been active has made it clear that large amounts of saline subcutaneously may be used with advantage, patients having readily absorbed from three to six quarts in twenty-four hours. Hartwell maintains that in man there is no necessity of draining out the intestinal contents, which has been urged by the believers in the theory of a secreted toxin, unless the bowel is damaged. Simple stagnation does not yield a poisonous substance, and consequently the release of the obstruction by operation is sufficient. When, however, strangulation has begun, the material above the obstruction should be removed, and if extensive damage exists, a continued drainage through an enterostomy may be needed.

3. Hartwell, J. A.: Jour. Exper. Med., 1913, xviii, 139.

Current Comment

THE HEALTH TRAIN AS A STIMULUS TO SANITATION

The value of the health train, now being employed in some states to educate the people on the value of better hygiene and sanitation, is undoubted. It gives direct instruction in personal and community hygienic principles, and the printed reports of the inspectors accompanying the train concerning the towns and villages through which the train passes have become a strong stimulus to sanitary improvement. This is accomplished both through appeals to local pride and through light thrown on specific defects. The State Board of Health[1] of Michigan during the summer ran a health train through the state, touching at many points. Great interest was manifested in the lectures and the exhibits connected with the train. In the report of the inspectors, the sanitary shortcomings of many villages are set forth in plain terms. For instance, of one town it is said: "Health sentiment is at a low ebb here. The health officer was attending a picnic, but the flies were attending to business in the unscreened, filthy privies and garbage-heaps around the town." This particular town is not likely to be proud of this report, and the health officer will undoubtedly begin to clean things up. In contrast to this it was said about another town: "This is the most all-round sanitary little village visited by the special. A good progressive president and health officer, backed by a splendid sanitary sentiment." In many places it was found that the health department was active and efficient, but was not supported by the proper public sentiment. This is the chief shortcoming of most places, on the part both of the citizens and of the city or town authorities who fail to vote sufficient money to carry out sanitary measures effectively. While there was no intention of being hypercritical, the truth was plainly told in the report and without doubt the awakening secured by the health train and the report on sanitary conditions will work a great improvement. Michigan, of course, is not different in this regard from other states, and the report on conditions there would probably apply almost exactly to any state making a similar inspection. The method of teaching personal and public hygiene by the health train is a modern invention that should be encouraged.

HEALTH PROBLEMS IN JERUSALEM

The triumphs of modern sanitation have furnished so many conspicuous illustrations of what can be accomplished by the practice of the teachings of modern scientific hygiene that the possibilities involved have already become familiar to the reading and thinking public of the United States. The experience of our government

1. Bull. State Board Health, August, 1913.

alone, culminating in the splendid success of Colonel Gorgas in the Panama Canal Zone, cannot fail to awaken an eagerness to apply comparable measures speedily in all parts of the world where health conditions and sanitary environment suggest the possibility of work in the direction of eliminating disease. A conspicuous instance of the need for such work is furnished at present by Jerusalem, a city in which one out of every five of its 70,000 inhabitants carries the parasite of malaria in his blood and three-fifths of the population give evidence of enlargement of the spleen. These facts, so striking because of the enormous incidence of preventable disease and so pathetic because they mean so large a loss of human usefulness, are not hearsay figures. They are, on the contrary, the outcome of investigations by a scientific commission at the Health Bureau of the Jewish Agricultural Experiment Station in Jerusalem. This laboratory of hygiene, endowed in 1912 by the New York philanthropist Nathan Straus to combat the endemic diseases of Jerusalem, malaria in particular, has rendered a report[1] from which the statements made above have been quoted. The city is not unfavorably situated from the point of view of climate or elevation; nevertheless it is the home of disease in its most varied manifestations. This is due primarily to the great poverty of the population; and added to this is the indifference or ignorance of the Turkish officials in matters of hygiene. In the light of present-day knowledge the pictures of the primitive sanitary arrangements that still obtain in ancient Jerusalem would furnish an interesting object-lesson. As might be expected, *Anopheles* reigns supreme. The chief breeding-places of the mosquito are the cisterns which provide to the inhabitants the water-supply conserved from the rain which reaches the house-tops. Primitive privies are all too frequently found in close proximity to the drinking-water cisterns. It is an old story, the foremost interest in which now lies in the extent of the invasion of disease, especially malaria, and the consideration of the best means for combating this under the rather unusual conditions that prevail in a city where every nationality and religious sect seeks to maintain its territorial and governmental independence under the manifestly helpless jurisdiction of Turkish officials. Elsewhere the extermination of the anopheles mosquito by drainage, the use of petroleum oils, etc., has been effectively combined with prophylactic administration of quinin. A complete and expensive program cannot yet be carried out in Jerusalem. A beginning has been made by the introduction of screening devices for the cisterns. Bacterial infections are to be eliminated in part by attention to the problems of sewage disposal. It is easy to outline ideal plans for the improvement of the unfortunate conditions which have so long been tolerated in such places as Jerusalem. The actual work of sanitary conquest must, however, keep pace with the advance of general enlightenment and political and economic progress, unless a superior power somehow is introduced which will put an end to apathy in regard to matters of hygiene.

1. Brünn, W., and Goldberg, L.: Die Malaria Jerusalems und ihre Bekämpfung, Ztschr. f. Hyg. u. Infectionskrankh., 1913, lxxv, 209.

PUBLIC OPPOSITION TO PROTECTIVE MEDICAL MEASURES

Opposition to legislation designed to regulate the practice of medicine, but almost wholly in the interests of the public, seems not to be confined to this side of the world. A bill introduced into the legislative council of South Australia to make better provision for the registration of medical practitioners, according to the *Australasian Medical Gazette*,[1] has created a great deal of unfavorable comment. Under this bill it is proposed to restrict the practice of medicine and surgery to those legally qualified and registered within the meaning of the act, and all practice by herbalists, dispensing chemists and quacks of all description is prohibited under penalty. The usual objection has been raised that the wording of this particular act might penalize any one who might advise a friend to take a dose of castor oil for a common ailment, or a mother who might help to relieve from pain a neighbor's child. The *Gazette*, in commenting on this opposition, says that it seems almost impossible to drive into the mind of the layman that any "common ailment" may be a symptom of a serious disease, and that the administration of a dose of castor oil to a patient suffering from constipation might be a very serious matter if the constipation were due to strangulated hernia or intestinal obstruction. It is further said that until the general public can be better educated in medical matters some will always be found who prefer to trust their lives to the heaven-inspired herbalist or quack rather than to the educated medical practitioner. It would seem also that the wolf cry, "medical trust," is raised in the antipodes as well as on this side of the earth, for the comment is made that, "unfortunately, the medical profession generally incurs public odium in any attempt to secure legislation which may protect the profession, but which helps to a much greater extent to protect the public. We are accused of attempting to establish a close monopoly. . . . The profession of medicine has a right to be protected from the competition of uneducated and unscrupulous quacks who trade on the credulity of the public, but the general public have still greater need to be protected from themselves and their own ignorance and from the 'assistance' of the writers in the lay press who fail to grasp the seriousness of the situation in advocating the recognition of the herbalist, the optician, the dispensing chemist, as competent to give medical and surgical advice." What a complete and perfect echo is this of conditions on our own side of the world!

1. Australasian Med. Gaz., Sept. 13, 1913.

COLLEGE ENTRANCE EXAMINATIONS, JUNE, 1913

During the week beginning June 16, 1913, under the auspices of the College Entrance Examination Board, 4,159 high-school students were examined for entrance to various colleges. The examination covered sixteen subjects, for each of which three examiners had been selected, two being teachers in colleges and one a teacher in a secondary school. Altogether, therefore, there were forty-eight examiners, experts in their various subjects,

V. 61
1913

who prepared the questions for the examination. The examinations were held simultaneously in forty states of this country, and in eight dependencies and foreign countries — altogether, in 170 different cities. The examination in each city was given at some trustworthy educational institution, under selected supervisors and proctors. After the examination papers were completed they were placed in charge of readers who did the grading. This year 147 readers were appointed to grade the papers, and of these, eighty-five were representatives of colleges and sixty-two were representatives of secondary schools. In fees from candidates examined $22,335 was received. For the preparation of the questions and other service the forty-eight examiners were paid $1,629 for salaries and expenses; for grading the papers, the 147 readers were paid $12,562 for salaries and expenses; for supervision of the examinations and for proctors $2,836 was expended for salaries and expenses. Those interested in preliminary examinations should read the Thirteenth Annual Report, which may be obtained from the secretary of the board, Substation 84, New York City. When it is seen that our colleges are arranging a single, well-conducted, thorough and uniform examination covering the secondary school branches, one can but wish that all high-school examinations for admission to medical colleges might also be conducted under the auspices of the College Entrance Examination Board. This would do away with the present confusion of standards and ratings resulting from the multiplicity of agencies now issuing certificates for entrance to medical schools. Here, indeed, seems to be a solution of the gravest problem of our medical schools—the securing of a thorough and reliable "equivalent" credential by those who have not been fortunate enough to complete a course in a standard four-year high school. Here again is an examination conducted along such lines as to place it entirely above suspicion, making it worthy, therefore, of general acceptance.

DANCING

It seems somewhat late to enter a mild protest against the fervor with which the newest "so-called" dances have been taken up by a public already saturated with various nerve- and mind-destroying amusements and caprices. It seems unnecessary to call attention to the fact that the tango, the various waltzes, the maxixe, etc., are being arduously cultivated by callow youth and calloused old age. The problems created by these dances differ according to the age of the participants; for the young the question of morality is paramount; for the old the possibility of too great a strain on a dilated heart or an arteriosclerotic vessel is apparent. The physician will do well to caution the stiff-jointed, aged patient, who derives too great a pleasure from these — to him — potentially harmful amusements.

All Treatment an Experiment.—All treatment, however carefully chosen, is in the nature of an experiment, for none can know the exact effect of any treatment or drug on any individual patient until he has tried it. A drug may suit ninety-nine persons but be injurious to the one-hundredth, because of some idiosyncrasy.—F. M. Sandwith, in *Clin. Jour.*

Medical News

CALIFORNIA

Typhoid Inoculation at University.—Antityphoid inoculation is being administered free to the students and faculty of the University of California. Thus far immunization is optional.

Hospital Dedicated.—The new Mercy Hospital, Bakersfield, was dedicated November 9, with impressive ceremonies by Right Rev. Thomas Conaty, bishop of Monterey and Los Angeles.

Sanatorium Incorporated.—The Oaks Sanatorium has been incorporated at San Jose with a capital of $50,000, and the following officers have been elected: president, Dr. Richard F. Tomlinson, San Francisco; secretary, Dr. Lily Boldemann, San Francisco; treasurer, Dr. William Boericke, San Francisco, and medical superintendent, Dr. Mary C. MacInnes, Los Gatos.

Fund for Medical Building.—The Board of Regents of the University of California announced November 11, the completion of the additional fund of $600,000 for the erection of the hospital building which is to be a part of the College of Medicine of the University. It was stated that the principal donations to the fund were from Mr. and Mrs. William H. Crocker, Templeton Crocker and Mrs. C. B. Alexander, New York, who contributed $150,000, and John Keith who also donated $150,000. A committee was appointed to administer the fund and supervise the erection of the building.

Personal.—Dr. J. M. G. Carter, Los Angeles, has donated his medical library and many scientific books to the University of Southern California.——Dr. C. L. McKown, Niles, who has been ill with septicemia at Pacific Grove has recovered and resumed practice.——Dr. Charles T. Palmer, assistant health officer of Los Angeles, is said to have been committed to the State Hospital for the Insane, Patton.——Fresno County Medical Society was entertained at dinner by Dr. C. T. Rosson, at his home in Hanford, November 4.——Dr. C. H. Adair, Fresno, was struck by a street-car November 4 and seriously injured.——Dr. A. F. Gillihan, Berkeley, has been appointed health commissioner of Oakland as the result of a competitive examination.

ILLINOIS

Death of Dr. W. K. Newcomb.—As we go to press we learn of the death of Dr. W. K. Newcomb of Champaign.

Contract Let for Hospital.—The Cook County Board has awarded the contract for the tuberculosis hospital and other buildings at Oak Forest for $581,467.

New Officers.—Fox River Valley Medical Society at Aurora, November 18: president, Dr. Raymond G. Scott, Geneva; vice-president, Dr. Ora L. Pelton, Elgin.

Health Bureau for LaSalle.—Through the beneficence of Mr. F. W. Matthiessen, LaSalle, the cities of LaSalle, Peru and Oglesby are to have a model health bureau in charge of an expert commissioner, health officers and sanitary inspectors. The expense of the undertaking will be about $20,000.

Personal.—Dr. and Mrs. John A. Pratt, Aurora, and Dr. Carroll B. Welton, Peoria, have returned from abroad.——Dr. Rockwood Sager is reported to be critically ill with a cerebral hemorrhage at his home in Rockford.——Dr. and Mrs. Theophil J. Holke, Peotone, sailed for Europe November 22.——Dr. Harry M. Hayes, Peoria, is seriously ill with typhoid fever in Proctor Hospital.

Chicago

Physicians' Club.—At the opening meeting of the Physicians' Club of Chicago December 5, at the Hotel Sherman, Prof. George A. Dorsey of the University of Chicago will preside and Lieut.-Col. Charles E. Woodruff, M.C., U.S.A. (retired), will speak on "Medical Ethnology."

Personal.—Dr. and Mrs. Plumer M. Woodworth, who have been spending four months in California, have left for Honolulu, where they will spend the winter.——Dr. Sarah A. Noble has returned from Europe.——Dr. Andrew M. Harvey has been elected president of Local Council No. 3 of the National Council for Industrial Safety.——Dr. and Mrs. Charles Adams left Chicago for their new home in Honolulu, T. H., November 22.

MASSACHUSETTS

Sanatorium Fire.—Fire in one of the buildings of the Ring Sanatorium, Arlington Heights, November 17, necessitated the transfer of five patients and caused damage amounting to $2,000.

New Officers.—Boston Society of Medical Science at Harvard Medical School, November 18: president, Dr. Theobald Smith; vice-presidents, Drs. Henry A. Christian and David L. Edsall; secretary-treasurer, Dr. Thomas Ordway.

New Antituberculosis Officers.—At the annual meeting of the Springfield Association for the Prevention of Tuberculosis, November 12, Dr. George L. Schadt was elected president, and Drs. Allen G. Rice, Edgar H. Guild and Ralph B. Ober were elected members of the executive committee.

Hospital Staff Election.—At the annual meeting of the North Adams Hospital Staff November 10, it was announced that Mrs. A. L. Hopkins, Williamstown, who gave the laboratory to the hospital a year ago, is offering to provide an assistant to the pathologist of the institution. Dr. Augustus K. Boom, Adams, was reelected president and Dr. Francis J. O'Hara, North Adams, vice-president, and a conference board consisting of Drs. Martin M. Brown, Frank D. Stafford and John R. Hobbie was named to confer with the hospital authorities on matters pertaining to medical attendance at the institution.

Reporting of Occupational Diseases.—The State Board of Labor and Industries and the Industrial Accident Board are making arrangements through subcommittees for a public hearing at the State House in regard to the adoption of a regulation requiring all physicians to report occupational diseases to the joint board, this hearing to be held as provided for by Section 2, Chapter 813, Acts of 1913. Representatives of all the medical societies of the state and physicians generally will be invited to attend the conference, and the meeting will be addressed by the experts engaged by the special committee created by the joint board, James B. Carroll, James A. Lowell and Mrs. Davis R. Dewey. Arrangements for the proposed meeting are in the hands of a subcommittee, consisting of James W. Crook, Joseph A. Parks and Channing Smith. It is expected that a comprehensive plan for the reporting of occupational diseases will be developed as a result of the conference.

Mental Diseases and Alcohol.—A conference on the problems of mental disease due to alcohol, open to physicians and officials dealing with the alcohol problem, was held in the assembly room of the Psychopathic Hospital, Boston, November 24, under the auspices of the trustees of the Boston State Hospital and the legislative committee on drunkenness. After introductory remarks by Dr. Walter Channing of the Boston State Hospital, the scope of the work of the Massachusetts commission on drunkenness, 1913, was detailed by Hon. M. J. Murray, chairman of the commission; Dr. H. M. Adler described, with clinical demonstrations, types of alcoholic mental disease at the Psychopathic Hospital; Dr. T. E. Eversole read a paper on "Consensual Amyosis to Blue Light as Shown in Alcoholic Cases." Dr. H. M. Adler made some further remarks on therapy, especially hydrotherapy in various hyperkinetic states; Drs. A. W. Stearns and Mary C. Jarrett presented notes on the after-care and moral suasion work with alcoholics in the outpatient department of the Psychopathic Hospital, and Dr. E. E. Southard, director of the hospital, discussed "The Alcohol Problem Viewed From the Angle of the Psychopathic Hospital." The presentation of these papers was followed by a general discussion.

NEW JERSEY

New Jersey Sanitary Association.—The thirty-eighth annual meeting of the New Jersey Sanitary Association will be held at the Laurel-in-the-Pines, Lakewood, December 5 and 6, under the presidency of Dr. Benjamin VanD. Hedges, Plainfield.

New Officers.—Mercer County Medical Society at Trenton, November 11: president, Dr. Harry R. North; secretary, Dr. Walter A. Taylor, both of Trenton.——Tri-County (Salem, Gloucester and Cumberland) Medical Society at Bridgeton, October 28: president, Dr. E. S. Corson, Bridgeton; secretary-treasurer, Dr. George E. Reading, Woodbury.

New Board of Health Building Dedicated.—The new four-story Board of Health building at William and Plane Streets, Newark, was dedicated with simple ceremonies, November 8. The keys of the building were turned by the mayor to Dr. Herman C. H. Herold, the health officer, but the Board of Health will not occupy the building until the first of the year.

Pavilion Plans Approved.—The preliminary plans for the proposed tuberculosis pavilion and hospital annex at the Overbrook Hospital for the Insane were approved by the freeholders' committee at Newark, November 10. The pavilion will accommodate sixty-seven women and fifty-five men and will cost about $130,000. The proposed additional hospital wing, which will accommodate 200 patients, will be 200 by 40 feet, and will cost about $180,000.

NEW YORK

Health Department Exhibit at State Fair.—The State Department of Health installed an entirely new health exhibit at the state fair this year. It was divided into three sections: Home and farm sanitation, care of the baby and the child's health at school. In the sanitation exhibit there was a landscape model illustrating the pollution of streams through a large stretch of country; a model of an inexpensive sewage disposal plant for a country house, and models showing the pollution of well water and the layout of a sanitary farm.

Epidemic Sore Throat.—Numerous cases of septic sore throat and glandular involvement have been reported from various portions of the state. The patients have frequently been ill for several days with mild sore throat and temperatures of from 101 to 102 F. for several days. There is sometimes a light induration of the lymphatics at the angle of the jaw. The condition seems to be very communicable and the State Health Department recommends that patients suffering from this condition should be isolated and not allowed to mingle with other members of the household. It is also recommended that cultures be taken from the throats of all who come in contact with such cases and that they be watched to see if sore throat, or glandular enlargement, or possibly a rash or desquamation follows in two or three weeks.

New York City

Harvey Society Lecture.—The fourth in the present course of Harvey Society lectures to be delivered at the New York Academy of Medicine November 29, at 8:30 p. m. by G. H. Parker, Harvard University, is on "The Nervous System; Its Origin and Evolution."

Street Fatalities for October.—During October thirty-six children were killed in New York City by automobiles and other vehicles. This number is the highest on record and brings the total of children killed by all classes of traffic since January up to 227. Automobiles have furnished 60 per cent. of the victims of traffic in Greater New York. The National Highways Protective Association urges better playground facilities or any policy which will relieve congestion of population as a material aid in decreasing the number of street deaths by accident.

Corner-Stone of New Dispensary Laid.—The corner-stone of the new dispensary in connection with the Hospital for Deformities and Joint Diseases was laid on November 4. Among those who made addresses were Dr. Abraham Jacobi, Rabbi Maurice Harris, Judge Julius Mayer, Dr. Reginald Sayre and Felix Warburg. Dr. Herman C. Frauenthal is surgeon in chief of the hospital, which during the past year has taken in 4,023 new cases, 600 more than in 1912, and 3,811 more than in 1907. It was announced that $50,000 more was needed to complete and equip the dispensary.

Personal.—Dr. James W. Jobling of the Morris Institute for Medical Research in Chicago has been appointed assistant professor of pathology to succeed the late Dr. Hugh Angus Stewart.——Dr. Frederick S. Lee, Dalton professor of physiology of Columbia University, has been appointed delegate to the University Council from the faculty of medicine, to serve until June 30, 1916.——A memorial window to the late Dr. James Edward Newcomb has been placed in the hall of the Stony Wold Sanatorium, Lake Kushaqua, N. Y., and dedicatory exercises will be held there October 22.

Society for Advancement of Clinical Study Begins Work.—The Society for the Advancement of Clinical Study in New York issued its first bulletin of clinics for November 7. The society maintains a bureau at the New York Academy of Medicine, where the list of operations open to physicians is posted daily, together with the time of operation and the name of the operator. The bulletin of operations will be mailed to any physician for 50 cents a week, and to hospitals sending in regular reports of their lists of operations, it will be sent free of charge. It is believed that this method of informing physicians of the city what is being done in the various clinics and making it possible for them to visit these clinics is a great step in advance in dissemination of medical knowledge.

OREGON

Alumni Banquet.—The Alumni Association of the Medical Department of the University of Oregon held a meeting and banquet in Portland October 13. Dr. William E. Smith, presi-

V. 61
1913

dent of the medical branch of the Alumni Association, acted as chairman, and Dr. A. G. Bettman as secretary.

Meeting of Eastern Oregon Physicians.—The annual meeting of the Eastern Oregon Medical Society was held at Hot Lake October 29. Dr. M. K. Hall, La Grande, was elected president, Dr. W. D. McNary, Pendleton, vice-president, and Dr. T. M. Henderson, Pendleton, secretary-treasurer (reelected).

Social Hygiene in Oregon.—At the second annual meeting of the Oregon Hygiene Society held in Portland, October 17, Dr. Calvin S. White was elected president, Dr. William House chairman of the publication committee, Dr. Andrew C. Smith chairman of the advisory committee, and Dr. G. N. Pease chairman of the exhibit.

State Association Meeting.—At the thirty-ninth annual session of the Oregon State Medical Association held in Medford the following officers were elected: president, Dr. Calvin S. White, Portland; vice-presidents, Drs. R. W. Stearns and J. J. Emmons; secretary, Dr. M. B. Marcellus, Portland (reelected). Portland was selected as the next place of meeting.

PENNSYLVANIA

Physician Exonerated.—A verdict exonerating Dr. Victor P. Vieslet, Charleroi, from blame in the causation of the death of John Almosi, who was struck and fatally injured by the physician's car recently, was returned by the coroner's jury, November 8.

Philadelphia

Medical College Buys Building.—Jefferson Medical College has purchased for $12,000 a three-story brick building adjoining the Jefferson College Institute of Anatomy.

Medical Staff Banqueted.—The annual meeting of the medical staff of St. Mary's Hospital was held November 19. At the banquet which followed the meeting Dr. Ellwood R. Kirby acted as toastmaster and short addresses were delivered touching on the improvements to be made at the institution early next year at a cost of $225,000.

SOUTH DAKOTA

Personal.—Dr. H. T. Ground, Aberdeen, has been appointed a member of the staff of the State Hospital for the Insane, St. Peter, Minn.——Dr. and Mrs. E. B. Taylor, Huron, sailed for Europe, November 1.

New Hospitals.—The new Peabody Hospital, Webster, was formally opened October 18. The building is 36 by 56 feet, and two stories and a basement in height, and has accommodation for sixteen patients.——Mitchell has been selected as the location of the new Methodist Hospital.

New Officers.—Black Hills Medical Association in Deadwood; November 6: president, Dr. F. E. Ashcroft, Deadwood; secretary-treasurer, Dr. F. W. Minty, Rapid City.——Third District Medical Association at Aberdeen: president, Dr. N. K. Hopkins, Arlington; secretary-treasurer, Dr. L. N. Grosvenor, Huron.

TEXAS

Association Changes Name.—The Texas Antituberculosis Association will hereafter be known as the Texas Public Health Association.

Academy of Medicine Organized.—The San Antonio Academy of Medicine was organized November 10, and the following officers were elected: president, Dr. C. A. R. Campbell; vice-presidents, Drs. J. W. Carhart and F. Hadra, and secretary-treasurer, Dr. R. A. Roberts.

New Officers.—Fifth District Medical Society at San Antonio, November 6; president, Dr. William Myers, Seguin; secretary, Dr. J. A. McIntosh, San Antonio (reelected).——Fourth District (San Angelo) Medical Association at Lampasas, October 28 and 29: president, Dr. J. W. Ellis, Lampasas; secretary-treasurer, Dr. J. M. Horn, Brownwood (reelected). Ballinger was selected as the next place of meeting.——Sixth District Medical Association at Corpus Christi, October 14: president, Dr. F. G. Painter, Corpus Christi; secretary-treasurer, Dr. L. J. Manhoff, Port Aransas.

Personal.—Dr. R. L. Vineyard, Amarillo, has been appointed house physician at the Santa Fe General Hospital, Temple.——Dr. and Mrs. H. A. Logsdon, Forth Worth, entertained the Phi Chi Medical Fraternity of Texas University, November 3.——Dr. J. P. Simonds, professor of preventive medicine in the State University, Galveston, has been appointed assistant professor of pathology in the medical department of Northwestern University, Chicago.——Dr. and Mrs. G. A. Wedemeyer, Taylor, have returned from abroad.——Dr. Milton W. McMurray suffered a fracture of two ribs and a severe sprain of the ankle in a collision between his automobile and a Frisco passenger train at Houston, October 29.

WASHINGTON

Personal.—Dr. Jesse Wilbur Calkins, Seattle, has gone to Europe for three years' study.——Dr. J. M. Semple, superintendent of the Eastern Washington Hospital for the Insane, Medical Lake, has resigned to take effect November 9.

Silver Jubilee of Society.—The King County Medical Society celebrated its silver jubilee at Seattle with a banquet at the Arctic Club over which Dr. Arthur E. Burns presided as toastmaster. Ten of the charter members of the association were present.

Anatomical Club Incorporated.—Eleven physicians of Seattle have incorporated an anatomical club for the purpose of carrying on studies in surgical anatomy. The association has an arrangement with the county commissioners of King County by which the bodies of paupers will be furnished for dissection.

New State Board Members.—Governor Lister on November 15 announced the appointment of a new board of medical examiners. From the regular school Drs. Robert Percy Smith and Andrew J. Nelson, Seattle; Royal A. Gove, Tacoma; Jesse J. Tilton, Toppenish, and Conrad N. Suttner, Walla Walla, were appointed. Drs. James A. MacLachlan, Dayton, and Elmer D. Olmsted, Spokane, are representatives of the homeopathic school, and J. R. Walker, Sunnyside, and J. E. Hodgson, Spokane, are the osteopathic members of the board.

WEST VIRGINIA

Hospital Incorporated.—The Beckley Hospital and Nurses' Training School, with accommodations for thirty patients, has been incorporated by Drs. James E. Coleman, Fayetteville, and Robert Wriston, Beckley, with a capital stock of $25,000.

Physicians of Four Counties Meet.—At the annual meeting of the Grant, Hampshire, Hardy and Mineral Counties Medical Society, held in Piedmont, October 16, the following officers were elected: president, Dr. Zadock T. Kalbaugh, Piedmont; secretary-treasurer, Dr. W. Holmes Yeakley, Keyser (reelected).

Instruction of Health Officers.—In accordance with the provisions of the county medical practice law, the State Board of Health held a meeting in Parkersburg, November 28, devoted to the instruction of county and municipal health officers in the region adjacent to Parkersburg. In the evening a public meeting was held at which Dr. A. B. Frost, U.S.P.H.S., Governor Hatfield, and the president and secretary of the state board made addresses on subjects pertaining to health affairs.

Personal.—Dr. Joseph M. Houston, Elm Grove, was painfully injured by a fall from a horse November 10.——Dr. L. A. Davidson, West Milford, is ill and under treatment at the State Hospital, Weston.——Dr. Jonathan Edward Burns, Wheeling, has returned from Europe.——Dr. Lewis V. G. Guthrie, Huntington, has been reappointed superintendent of the West Virginia State Hospital, Huntington.——Dr. Robert A. Ashworth, Richwood, has been appointed official physician for the State Penitentiary, Moundsville, vice Dr. J. C. Peck, resigned.——Dr. John W. Gilmore, Wheeling, has been appointed a member of the medical board of the View Point Sanitarium and Ohio County Antituberculosis Dispensary, vice Dr. Thurman Gillespy.

GENERAL

Meeting of Alton Surgeons.—At the annual meeting of the Chicago and Alton Railway Association of Surgeons held in Chicago, November 8, Dr. H. C. Fairbrother, East St. Louis, was selected president and Dr. J. W. Dreyfus, Louisiana, Mo., vice-president.

Soo Line Surgeons to Meet.—The seventh annual meeting of the Minneapolis, St. Paul and Sault Ste. Marie Railway Surgical Association will be held in Milwaukee December 4 and 5. Governor McGovern of Wisconsin will deliver an address on "The Workman's Compensation Act."

Personal.—Dr. A. E. Spaulding, Luverne, president of the Minnesota State Medical Association, has been elected president of the Rock Island Railway Surgeons' Association.——Dr. Henry M. Bracken, St. Paul, secretary of the Minnesota State Board of Health, has been elected president of the Minnesota School Hygiene Association.——Drs. Homer J. Hall, Franklin, Ind., has been elected a vice-president of the National Council of One-Hundred, a reform organization connected with the

Anti-Saloon League, and Dr. Thomas D. Crothers, Hartford, was elected a member of the council.

Appropriation for Scientific Research.—The trustees of the American Medical Association have made a new appropriation for the Committee on Scientific Research. The committee has decided to use this money as far as possible to promote work in medical research where suitable conditions exist but where such work suffers for the lack of relatively small sums of money. Applications for grants are invited and may be sent to any member of the committee, which consists of L. Hektoen, 1743 West Harrison Street, Chicago; S. Flexner, Rockefeller Institute for Medical Research, New York, and William Litterer, Vanderbilt University, Nashville, Tenn.

Bequests and Donations.—The following bequests and donations have recently been announced:

Mount Sinai Hospital, New York City, $100,000, one-half of the income to be used for the department of nervous diseases, and the remainder for the general purposes of the hospital; St. Luke's Hospital, German Hospital and Dispensary, New York Eye and Ear Infirmary and Lincoln Hospital and Home, each $25,000 by the will of Benjamin Altman.

New York Post-Graduate School and Hospital, $2,000 by the will of Mrs. Mary L. Parsons.

Beth Israel Hospital, New York City, $5,000; Mount Sinai Hospital, $2,500; Lebanon Hospital and the Montefiore Home, each $1,500; Hospital for Deformities and Joint Diseases, Har Moriah and the National Jewish Hospital, Denver, each $1,000.

Mount Sinai Hospital, New York, German Hospital and the Montefiore Home each $2,500 by the will of Max E. Bernheim.

South Bend Visiting Nurses' Association, a donation of $5,000 by Mrs. George W. Wyman.

Boston Medical Library, $86,800 by the will of Mrs. Ellen B. Wyman, Newburyport, Mass., to be known as the Samuel Wheeler Wyman Memorial Fund.

Charity Hospital, New Orleans, $20,000 by the will of Mrs. Tilton, a donation of $1,000 from the estate of Edward Rosenberg, a second payment of equal amount to be paid Oct. 1, 1914.

Army Medical Corps Examinations.—The surgeon general of the Army announces that preliminary examinations for appointment of first lieutenants in the Army Medical Corps will be held on Jan. 19, 1914, at points to be hereafter designated. Full information concerning these examinations can be procured on application to the "Surgeon General, U. S. Army, Washington, D. C." The essential requirements to secure an invitation are that the applicant shall be a citizen of the United States, shall be between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits and shall have had at least one year's hospital training as an intern, after graduation. The examinations will be held simultaneously throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible. In order to perfect all necessary arrangements for the examinations, applications must be completed and in possession of the adjutant general at least three weeks before the date of examination. Early attention is therefore enjoined on all intending applicants. There are at present twenty-six vacancies in the medical corps of the Army.

CANADA

New Hospital.—A new fifty-room hospital is to be erected at Walkerville, Ont., at a cost of $50,000.

New Officers.—Vancouver Medical Association: president, Dr. J. W. McIntosh; vice-president, Dr. W. D. Keith; secretary-treasurer, Dr. A. B. Schinbein. At the meeting November 10, Dr. Peter H. Bryce, medical officer, Department of the Interior, Ottawa, delivered an address on "The True Physician as Sociologist."

Dissatisfaction with Examination of Schoolchildren.—Several school trustees of the board of education, Toronto, are dissatisfied with the medical inspection of schoolchildren as carried out at present by the board of education, and will back the city council in its appeal to the Ontario government for special legislation to have the inspection done under the health department of the city.

Personals.—Dr. Charles A. Webster, graduate of Knox College, Toronto, and now professor of anatomy at Beirut, Syria, has terminated his furlough in Toronto and has returned to his duties in the foreign mission field of the Presbyterian Church of Canada.——Sir Arbuthnot Lane returning from Chicago, spent a day in Toronto and inspected the new General Hospital and the Wellesley private hospital. Sir Arbuthnot considers the Toronto General Hospital the best he has ever seen. He visited Ottawa November 22, and sailed from Montreal for England November 29.

Medical Inspection of Schools in British Columbia.—The Committee on the Medical Inspection of Schools of the Canadian Medical Association at the annual meeting in London last June, reported that medical inspection of schools was further advanced in the province of British Columbia than in any other province in Canada. Dr. C. J. Fagan, secretary of the Board of Health of that province, has just reported to the provincial secretary on this work for the year ended June 30. This work has been prosecuted since 1911, has made considerable progress and is now well-organized throughout that province. The whole work is under the supervision and charge of the provincial board of health and the medical inspectors in the unorganized districts are paid by that board. The work done in the cities of Victoria, New Westminster, Vancouver and South Vancouver has been excellent. When the tabulated report is inspected it is seen that there is a great number of scrofulous conditions present in the pupils. Twenty per cent. of all children reveal some sign of tuberculosis. Dr. Fagan urges the establishment of outdoor classes and outdoor schools and argues that the principle of the preventorium or open-air school should be extended so as to include all schools. In nearly all schools the teachers have heartily cooperated in the work. A report on 29,774 children shows that 16,774 are unvaccinated. All told 37,591 pupils were examined, enlarged tonsils and defective teeth giving the largest numbers: for the former, 5,302; for the latter, 12,644.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Nov. 8, 1913.

Nostrums in Australia

An address read before the Queensland branch of the British Medical Association by Dr. David Rosenburg contains some interesting information on the nostrum problem at the antipodes. In 1905 an act was passed which compelled a proper trade description of imports, including foodstuffs and patent medicines, but no restrictions were imposed with regard to articles produced in the commonwealth. As a result the following ridiculous situation has arisen: A preparation was imported which was known to be harmful but which bore a misleading label stating that it was harmless, especially to children. Under the commerce act the importers were called on to amend the statements. Instead of doing so they imported the substance in bulk and printing the labels in Australia, packed and labeled the medicine in the old way and so its sale was unaffected. The customs department has prevented the importation of (1) "cure-alls" with extravagant claims and absurd prices; (2) spirits claiming vast medicinal benefits, and (3) preventives to conception. A cancer cure which was prohibited by the customs is now being made in Victoria and freely sold. "Radam's Microbe Killer" was objected to because its label declared: "It is a positive and certain cure for all diseases and is guaranteed to be perfectly harmless. It will effect a cure in every instance if given a fair trial. It is perfectly harmless, and can be taken in any quantity without danger." Dr. Rosenburg quoted the fact that analysis by the American Medical Association showed that it contained hydrochloric acid, sulphuric acid and red wine. Its importation was prohibited, with what result? It is now being made in Victoria, and the federal government has no power over the advertisements or manufacture. The following are some other examples of articles, the importation of which was prohibited but which are now freely made and sold in the commonwealth: Blair's gout and rheumatic pills were prohibited because they falsely claimed to affect psoriasis and eczema, which they alleged were gouty skin affections. The label of "Wioletta Hair Tonic" was objected to by the customs. In the *Australasian* it is advertised thus: "I'm the absolute cure for baldness." Indian Root Pills and Doan's Backache Pills, "a specific for diabetes, congestion of the kidneys, inflammation of the bladder," are being imported in bulk, and after leaving the customs are packed in Australia, and the commonwealth government has no power over them Under the commerce act the claims for medicinal benefit from alcohol are not allowed on importation. The following are some specimens of the advertisements of articles manufactured in the commonwealth: "White Horse Whiskey"—"heart tonic." Wolfe's Schnapps—"a standard tonic," and, again, "A stimulant that is medicinal in its action, and is a direct health promoter, worthy of all men drinking. It has curative effect in kidney, bowel, and urinary affections." "Wincarnis," 21.4 per cent. proof spirit. "Vigorous vitality and sturdy strength."

V. 61
1913

Natives in the Medical Service of the Indian Army

In my last letter the effect of the recent throwing open of civil medical appointments in India to local practitioners, usually natives, was discussed. The medical service of the Indian Army, though open to the natives, has been mainly recruited from the British Isles. The examination is held in London and the appointments have been highly prized because the pay and other emoluments are much better than those in the British Army. The most brilliant of the recently qualified physicians have freely competed for them. The diminution of the emoluments is already producing a serious effect on the number of British candidates. At the last examination twelve vacancies were offered, and five of the successful candidates, including the first three, were Indians. It may be added that all the candidates must have British qualifications. This is not the first time that an Indian has headed the list of successful competitors. Admission to the Indian Medical Service was first thrown open for all duly qualified British subjects in 1853, and at the first competitive examination held under this act an Indian passed with the highest rank. In 1864 he was appointed professor of materia medica in the Calcutta Medical College, a post which he held until his death in 1874. Half a century elapsed before another Indian headed the list. But the obtaining of the first three places by Indians is unprecedented. That this is due not to exceptional merit of the Indian candidates but to diminished competition of the British, is indicated by the fact that the marks obtained in this competition are unusually low. In the last twelve examinations the highest marks obtained by the first man were 4,120 and the lowest 3,447. Only once have the numbers been less than on the present occasion (3,517). The marks of the twelfth man have varied from 3,554 to 2,958, whereas in the last examination they were only 2,878.

Sugar as a Butter Preservative

An unsuccessful prosecution was brought against a Liverpool firm on the charge of selling butter containing sugar. The prosecution claimed that the 1.2 per cent. of sugar present was a foreign ingredient. According to the law sugar could be used as a preservative; but as the quantity here present was not sufficient, it must be regarded as a foreign substance. The defendant stated that sugar was put in because the public liked a mild sort of butter. The magistrate dismissed the charge as he thought the act contemplated the presence of other preservatives besides salt.

Royal Commission on Venereal Diseases

The king has approved of the appointment of a royal commission to inquire into the subject of venereal diseases in the United Kingdom, their effects on the health of the community, and the means by which these effects can be alleviated or prevented, it being understood that no return to the policy or provisions of the contagious diseases acts is to be regarded as falling within the scope of the inquiry. These acts provided for the compulsory examination and detention of prostitutes. The public feeling aroused against them grew so much that their reintroduction in any form is out of the question. As stated in previous letters to THE JOURNAL, the appointment of this commission may be traced to the resolution passed at the International Medical Congress. It is composed of prominent public men and women, clergymen and a number of medical specialists (Sir Malcolm Morris, Sir John Collie, Dr. Mott, Mr. Ernest Lane and Mrs. Scharlieb). For a long time attempts have been made to induce the government to appoint this commission. In 1899 memorials were presented to Lord Salisbury (then prime minister) by the royal colleges of surgeons of England and Ireland and the British Medical Association, but the breaking out of the Boer War caused the subject to be shelved. In the same year the International Congress on Venereal Diseases was held at Brussels and resolutions were passed urging the various governments to appoint commissions of inquiry. The congress declared definitely against anything in the nature of the contagious diseases acts. Next a discussion on the subject took place at the Royal Society of Medicine in 1912. In June of this year Sir Malcolm Morris published an article in the *Lancet*, which received editorial support, asking for the appointment of a royal commission and drawing attention to the grave dangers of venereal disease being contracted innocently. Later a letter was published in the *Morning Post* asking for the appointment of a royal commission, signed by the presidents of the royal colleges of physicians and surgeons, the professors of medicine in the universities, and the presidents of the medical societies. This letter was endorsed by the representative meeting of the British Medical Association. A remarkable feature of the situation is the open manner in which the lay press has discussed the problem of venereal disease. During the meetings of the congress columns of the leading journals, the *Times* and *Morning Post* in particular, were devoted to discussions on syphilis. A few years ago these journals would scarcely dare to print the word and would use some periphrasis such as "a certain contagious disease."

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Nov. 7, 1913.

Action of Chlorids on Calomel

It is customary to warn patients who have taken calomel to refrain from salt or salted foods for some hours at least, after the medicine has been taken. Occasional complications which follow the taking of calomel have for a long time raised the question of a possible decomposition of calomel, with the formation of corrosive sublimate, in the presence of the sodium chlorids in foods. The question of the incompatibility of calomel and of table salt has been studied again recently. Dr. Patein, head pharmacist at the Lariboisière hospital, recently reported before the Académie de médecine the results of his experiments, which show that practically calomel is transformed into the sublimate by chlorids and lactates of sodium and ammonium, preformed or not, only when these salts are neutral. Decomposition begins only when the medium becomes alkaline. Sodium chlorid has the property of protecting calomel against the decomposing action of sodium carbonate. The purgative action of calomel cannot be attributed to its partial decomposition in the stomach. Patein found that dogs which had taken calomel mixed with salt showed no symptom of intoxication.

The Red-Cross Emblem

A recent decree fixed the conditions under which the red cross on white field or the words "red cross" or "Geneva cross" may be employed when, under exceptional conditions, their commercial use is authorized. According to this decree, goods made by private persons may bear these emblems or words on the packages or wrappers only on condition that they have been manufactured on commission for public use in the army or navy or for societies officially authorized to give aid to the sanitary service of the army or for associations which are officially authorized to give aid to the wounded, the sick or the shipwrecked and which have hospital buildings provided with an official commission.

Hygiene Among Barbers

At the last session of the Société de prophylaxie sanitaire et morale, Dr. Charles Fouquet, who had been commissioned to report on methods of diminishing the danger of infection from barbers, made the following recommendations, which are to be submitted to the barbers' organization: (1) that customers known to be sick or apparently sick should supply their own implements; (2) that the barber should wash his hands with soap and water before waiting on a customer; (3) that only clean and sterilized instruments should be used. It must be admitted that the first of these demands is unreasonable, since the barber cannot be expected to have this knowledge. For the cleaning and sterilizing of the instruments the following are the rules to be recommended: Edged tools should be washed in a 1 per cent. solution of sodium carbonate and dried; hair-brushes, shaving-brushes and combs should be cleaned every evening with water, soap and ammonia; metallic instruments should be passed through the flame; basins and shaving-brushes should be immersed in boiling water each time used; brushes and combs should be kept hermetically closed in a compartment in which stands an uncovered saucer containing a 40 per cent. dilution of liquor formaldehydi; the powder-puff should be replaced by a pad which should be thrown away after use, or by a shaker; rock alum should also be replaced by powdered alum applied with a pad; also the barber should not whet the razor on the palm of the hand.

Organization for English-Speaking Students

A Britannic section of the Université de Paris has been founded at the Sorbonne by English-speaking students. It is intended to facilitate relations between its members and English and American men and women who are interested in the intellectual affairs of France. Foreign students from English-speaking countries are admitted on the same footing as French students. The annual fee is 4 francs (80 cents).

Marriages

EDWARD EAMES HOLMAN, M.D., Pine River, Minn., to Miss Mary E. Corey of Terre Haute, Ind., at St. Paul, Minn., October 28.

WILLIAM STANLEY TIMBLIN, M.D., Chicago, to Miss Frances Ray Goldsworthy of Windsor Park, Chicago, November 22.

CLYDE WATKINS JUMP, M.D., Bozeman, Mont., to Miss Belle B. Pierce of Townsend, Mont., at Helena, November 5.

MICHAEL PENN CUMMINGS, M.D., Reidsville, N. C., to Miss Besse Ray Grove of Philadelphia, November 12.

GEORGE TILMAN BANKER, M.D., to Miss Katharine deWolfe Marble, both of Elizabeth, N. J., November 15.

THEODORE ALAN WILLIS, M.D., Clear Lake, Ia., to Miss Clara Marian Hammer of Harlan, Ia., November 4.

RABUN THOMAS WILSON, M.D., Houston, Tex., to Miss Metta Inez Andrews of Abilene, Tex., November 5.

FRANCIS PALMER RICHARDS, M.D., to Miss Mildred Edith Burnett, both of Mackay, Idaho, October 23.

THOMAS FRANCIS LEEN, M.D., to Miss Anna Jones Malley, both of Boston, at Brookline, November 11.

HARRY MERTON PAGE, M.D., Ashford, Wash., to Miss Amelia Johnson of Kelso, Wash., October 19.

EUGENE A. MACCORNACK, M.D., Chicago, to Miss Harriet L. Hiebner of Glencoe, Ill., September 5.

HARVEY P. MATTHEWS, M.D., to Miss Emma L. Grennell, both of Brooklyn, November 11.

JOSEPH D. ELY, M.D., Hudson, Mich., to Mrs. Ellen Van Buskirk of Fayette, O., November 8.

HARPER LANE PROCTOR, M.D., to Miss Sara Maude Gross, both of Jacksonville, Fla.

W. H. GRAINGER, M.D., to Miss Jessie Costa, both of East Boston, November 12.

Deaths

John T. McAnally, M.D. Northwestern University Medical School, 1883; a Fellow of the American Medical Association; of Carbondale, Ill.; formerly mayor of that city; for two terms a member of the Illinois State Board of Charities; at one time president of the Illinois State Medical Society, councilor of the Ninth Illinois District, and a member of the House of Delegates of the American Medical Association; one of the best known practitioners of Southern Illinois; died in the Presbyterian Hospital, Chicago, November 19, aged 65.

John Brown Gaston, M.D. University of Pennsylvania, Philadelphia, 1855; a member of the Medical Association of the State of Alabama; surgeon of the Nineteenth Alabama Regiment, C.S.A., and later division surgeon during the Civil War; twice mayor of Montgomery and since 1895 probate judge; a prominent and beloved citizen of Montgomery; died at the home of his son, November 8, aged 79.

John G. Daniels, M.D. University of Louisville, Ky., 1877; health officer of Upshur County, Texas; a member and a secretary of the Board of Medical Examiners for the Seventh Judicial District of Texas from 1888 to 1901; local surgeon of the St. Louis and Southwestern Railway since 1883; died at his home in Gilmer, October 30, aged 60.

William Royal Engel, M.D. Jefferson Medical College, 1906; formerly physician in charge of the Thermal Belt Sanatorium, Tryon, N. C., and of the North Carolina Tuberculosis Sanatorium, Montrose, and since 1911 a practitioner of Charlotte, N. C.; died at his old home in Tryon, October 28, from tuberculosis, aged 35.

Rudolph Clarence Mollman, M.D. University of Pennsylvania, Philadelphia, 1900; of Reading, Pa.; died at Longport, Atlantic City, N. J., November 5, from the effects of a gunshot wound believed to have been self-inflicted with suicidal intent, while despondent on account of ill health, aged 37.

C. W. Theodore H. Buehring, M.D. University of Göttingen, Germany, 1892; formerly of Nordheim, Texas; local surgeon of the San Antonio and Aransas Pass Railroad; a member of the American Association of Life Insurance Examining Surgeons; died at his home in Lockhart, Texas, November 4, aged 39.

Gurley Davis Moose, M.D. University of Maryland, Baltimore, 1907; of Mount Pleasant, N. C.; a Fellow of the American Medical Association; who contracted tuberculosis while an intern in Johns Hopkins Hospital; died from that disease in a hospital in Asheville, N. C., November 7, aged 30.

Thomas James, Jr., M.D. Hospital College of Medicine, Louisville, 1901; was found dead in his office in Louisville, October 22, from the effects of a bullet wound of the right temple, believed to have been self-inflicted with suicidal intent, while despondent on account of ill health, aged 35.

Allen M. Hall, Pennsylvania University, Lexington, Ky., 1848; chief surgeon of the Eighth Tennessee Infantry, C.S.A., during the Civil War; a practitioner of Sumner and Shelby counties, Tenn., for many years; died at the home of his daughter in Memphis, October 28, aged 90.

Samuel B. Mills, M.D. University of Louisville, 1852; for several years teacher of physiology and hygiene in the Louisville schools; at one time a member of the Board of Health; died at the home of his daughter in Fostoria, Louisville, October 24, from senile debility, aged 85.

Thomas Constantine Finnell, M.D. New York University, New York City, 1880; acting assistant surgeon, U. S. Army, during the Spanish-American War; physician for the Board of Health and Board of Education, New York City; died suddenly, November 6, aged 54.

Fred J. Peterson, M.D. California Eclectic Medical College, Los Angeles, 1900; died at his home in Camp Meeker, Cal., September 9, from the effects of a gunshot wound believed to have been self-inflicted with suicidal intent, while despondent on account of ill health.

George W. Campbell, M.D. College of Medicine of Southern California, Los Angeles, 1889; formerly a member of the city council of Los Angeles and coroner of Los Angeles County; a pioneer of Boyle Heights; died in the Clara Barton Hospital, Los Angeles, October 27.

William Lloyd Richards, M.D. University of Pennsylvania, Philadelphia, 1896; formerly a member of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; died at his home in Wilkes-Barre, November 6, aged 39.

Philip T. O'Brien, M.D. Albany (N. Y.) Medical College, 1872; for several years a member of the board of selectmen and the town school committee of Plymouth, Mass.; died at his home in Plymouth, October 31, from cerebral hemorrhage, aged 64.

George Alton Kennedy, M.D. University of Toronto, Ont., 1878; of Macleod, Alta.; surgeon-captain in the Northwest Mounted Police and local surgeon of the Canadian Pacific System; died in the Winnipeg General Hospital, October 8, aged 55.

Rudolph Ravenburg, M.D. George Washington University, Washington, D. C., 1874; a veteran of the Civil War; for half a century an employee of the War Department, Washington, D. C.; died in his apartment in that city, October 23, aged 81.

Thomas Benjamin Amiss, M.D. University of Pennsylvania, Philadelphia, 1861; a member of the Medical Society of Virginia and a surgeon in the Confederate service throughout the Civil War; died at his home in Luray, November 9, aged 74.

John Palmer Birch, M.D. Hahnemann Medical College, Philadelphia, 1870; for several years a member of the West Philadelphia School Board; died in the Hahnemann Hospital, Philadelphia, October 31, after a surgical operation, aged 81.

David K. Stringer, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1880; a practitioner of Grundy and Sullivan counties for forty-six years; died at the home of his daughter in Trenton, Mo., November 11, from cirrhosis of the liver.

Elizabeth G. Pyrum-Perry, M.D. Eclectic Medical College of the City of New York, 1882; a practitioner of New York City until 1892 and thereafter a resident of Fryeburg Center, Me.; died in that place, November 7, from pneumonia, aged 93.

Walter Lowry Williams, M.D. New York University, New York City, 1872; a member of the Medical Society of the State of Pennsylvania; local surgeon for the Pennsylvania System at Ridgway; died at his home, November 8, aged 69.

Bennie Castleman, M.D. University of Nashville, 1910; of Gladeville, Tenn.; died in St. Thomas' Hospital, Nashville, October 1, six days after an operation for appendicitis, aged 33.

Charles Edward Feller, M.D. Rush Medical College, 1885; of St. Paul, Minn.; died in St. Joseph's Hospital in that city, October 31, from stricture of the esophagus, aged 58.

V. 61
1913

John Tidwell Nethery, M.D. Vanderbilt University, Nashville, Tenn., 1891; a practitioner of Gibson County, Tenn., for more than thirty years; died at his home in Caruthersville, Mo., October 23, from cerebral hemorrhage, aged 61.

Daniel D. Kreider, M.D. Medico-Chirurgical College, Philadelphia, 1911; a Fellow of the American Medical Association and president of the Board of Health of Mount Holly Springs, Pa.; died at his home, November 7, aged 30.

Thomas E. Casterline (license, Nebraska, 1891); a practitioner for more than forty-five years; a veteran of the Civil War; one of the proprietors of the Edgar *Sun*; died at his home in Edgar, Neb., October 21, aged 87.

Wilson A. Long, M.D. College of Physicians and Surgeons, Baltimore, 1882; of Frederick; a member of the Medical and Chirurgical Faculty of Maryland; died in St. Agnes' Hospital, Baltimore, November 7, from pneumonia.

James Fleming McCarrell (license, Washington County, Pa, 1881, Allegheny County, Pa., 1890); a practitioner since 1868; died at the home of his brother in Dinsmore, October 31, from pneumonia following a fall, aged 81.

Harry A. Smith, M.D. University of Southern California, Los Angeles, 1894; for some time physician at the Whittier State School; died in his office in Los Angeles, November 2, from internal hemorrhage, aged 40.

Bryant Hopkins Nowlin, M.D. Bellevue Hospital Medical College, 1873; Louisville Medical College, 1886; a Confederate veteran; of Iola, Texas; died at the home of his daughter in Teague, Texas, August 9, aged 72.

George Thomas Mason, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1892; of Mount Pleasant, Iowa; for two terms auditor of Henry County; died at his home, November 4, aged 62, from nephritis.

Samuel Bell Bunch, M.D. University of Nashville, Tenn., 1889; of New Roe, Ky.; was found dead near his home October 26, from the effects of an accidental gunshot wound of the chest, aged 59.

John H. Howard (license, Tennessee, 1899); in practice for more than fifty years; a Confederate veteran; died at his home in Lexington, September 7, from hemorrhage of the stomach, aged 81.

Edward C. Lemen, M.D. Washington University, St. Louis, 1868; for forty years a practitioner of Alton, Ill.; a veteran of the Civil War; died in a sanatorium in Jacksonville, November 9, aged 72.

D. D. Potter, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1883; of Seward, Neb.; died at the home of his brother in Mount Hope, Kan., November 4, from tuberculosis.

Durand Hatch Albright, M.D. Jefferson Medical College, 1851; one of the oldest practitioners of Alamance County, N. C.; died at his home near Snow Camp, November 3, from cerebral hemorrhage.

Charles Edgar Wilson, M.D. Medical School of Maine, Brunswick, 1885; a member of the Maine Medical Association; died at his home in East Hiram, November 4, from heart disease, aged 60.

Samuel Augustus Marlin, M.D. Western Pennsylvania Medical College, Pittsburgh, 1894; of Clinton, Pa.; was killed in an automobile accident near Stoop's Ferry, Pa., October 23, aged 50.

Daniel A. Arter (license, Westmoreland County, Pa., twenty years' practice, 1881); a practitioner since 1850; died at his home in Canton, Ohio, November 5, from senile debility, aged 85.

James C. Johnson, M.D. Atlanta (Ga.) Medical College, 1859; for many years a practitioner of Macon, Ga.; died at his home in Vineville, November 1, from senile debility, aged 75.

James S. Baugh, M.D. Trinity Medical College, Toronto, Ont., 1881; medallist of his class; died suddenly at his home in Hamilton, Ont., October 18, from heart disease, aged 63.

John Kuestner, M.D. Hahnemann Medical College, Philadelphia, 1887; of Philadelphia; died in the Pennsylvania Hospital for the Insane, October 20, from strangulation by food.

Frank Marion Davis, M.D. Ohio Medical University, Columbus, 1901; a Fellow of the American Medical Association; died at his home in Pittsburgh, November 7, aged 44.

Charles Lingham Cunningham (license, Maryland); a practitioner for more than twenty-five years; died at his home in Cresaptown, October 22, from nephritis, aged 51.

George W. Armentrout, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1899; died at his home in Letts, Iowa, November 2, from heart disease, aged 50.

Ivan Annett, M.D. Western University, London, Ont., 1911; of Windsor, Ont.; died in Victoria Hospital, London, Ont., October 5, after a surgical operation, aged 23.

Camillus B. Faulconer, M.D. St. Louis Medical College 1865; a physician and capitalist of Montgomery, Mo.; died at his home, August 31, from nephritis, aged 78.

William W. Hill, M.D. Toledo (Ohio) Medical College, 1883; a veteran of the Civil War; died at his home in Weston, Ohio, October 17, from arteriosclerosis, aged 66.

William A. Hawk, M.D. Jefferson Medical College, 1880; a physician and pharmacist of Tower City, Pa.; died at his home, October 24, from heart disease, aged 50.

Edward Horan, M.D. Queen's University, Belfast, Ireland, 1880; of San Francisco; died in Trinity Hospital in that city, October 25, from pneumonia, aged 59.

James B. Crucial (license, years of practice, North Dakota); known as James Buchanan Cross; died in the Cass County Hospital, Fargo, October 30, aged 84.

Thomas D. Gamble, M.D. Washington University, St. Louis, 1858; of Wheatland, Iowa; died at the home of his daughter in that place, November 7, aged 83.

John Martin Cameron, M.D. Victoria University, Coburg, Ont., 1887; formerly of Thessalon, Ont.; died at his home in North Yakima, Wash., October 29.

A. E. Smith, M.D. Starling Medical College, Columbus, O., 1883; of Bracken County, Ky.; died at the home of his aunt in Cincinnati, October 14, aged 56.

Peter Fisher (license, years of practice, Illinois, 1878); for fifty years a practitioner; died at his home in Edwardsville, October 29, from uremia, aged 74.

Francis M. Cullum (license, Arkansas, 1908); an eclectic practitioner of Hartman; fell into a well at his home, November 3, and was drowned, aged 50.

Neill Monroe Culbreth, M.D. University of Tennessee, Nashville, 1882; died at his home in Wilmington, N. C., September 1, from spinal disease, aged 63.

Leonadus A. Rutherford, M.D. Eclectic Medical College of the City of New York, 1877; died at his home in Kinston, N. C., October 23, aged 63.

David O. Munsey, M.D. Medical College of Ohio, Cincinnati, 1878; a veteran of the Civil War; died at his home in Gaston, Ind., October 30, aged 68.

Allan B. Carscallen, M.D. Queen's University, Kingston, Ont., 1875; died at his home in Enterprise, Ont., recently from cerebral hemorrhage.

Arthur Harris Davis, M.D. University of Nashville, Tenn., 1879; died at his home in Little Rock, August 27, from heart disease, aged 53.

William Lafayette Abernethy, M.D. Kentucky School of Medicine, Louisville, 1877; died at his home in Hickory, N. C., in August.

William Frank Minard, M.D. Hahnemann Medical College, Philadelphia, 1887; of Waterbury, Vt.; died in Boston, October 9, aged 46.

Franklin Slocum (license, Michigan, 1900); a practitioner since 1858; died at his home in Ludington, September 6, aged 73.

Sidney A. Pierce, M.D. University of Pennsylvania, Philadelphia, 1868; died at his home in Rochester, N. Y., August 24, aged 68.

Clarence George Clark, M.D. University of Michigan, Ann Arbor, 1899; died at his home in New York City, November 5, aged 36.

Charles Anson Munn, M.D., New York University, New York City, 1883; died at his home in New York City, September 27.

William F. Sharp, M.D. Missouri Medical College, St. Louis, 1873; died at his home in Davilla, Tex., October 9, aged 73.

Thomas Abram Perrin, M.D. University of Michigan, Ann Arbor, 1873; died at his home in San Jose, Cal., October 6.

L. C. Presley (license, Arkansas, 1903); died at his home in Peebe, September 25, aged 74.

John Milton Homan, M.D. Harvard Medical School, 1903; died at his home in East Everett, Mass., October 6, aged 37.

Benjamin C. Jones, M.D. Missouri Medical College, St. Louis, 1867; died at his home in Poplar Bluff, Mo., October 9, aged 77.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

PULMONOL

Another Fraudulent Consumption Cure

"Fifty thousand physicians and all standard text-books endorse every ingredient in Pulmonol." Yes, and a hundred thousand physicians and standard text-books endorse every ingredient in dishwater; soap is good, grease is good, water is good, each in its place; but neither physicians nor any one else recommend dishwater as a cure for consumption. Neither does any physician nor any layman, except he be a fool or a knave, recommend Pulmonol as a cure for consumption.

Pulmonol is put on the market by the Pulmonol Chemical Company, New York City. The Pulmonol Chemical Company seems to be a trade name assumed by one Arthur Vincent Payne, M.D., who terms himself "medical director."

Like all consumption cures, the stuff is pushed by means of lying claims and worthless testimonials. Like every other concern that exploits "cures" for consumption, the Pulmonol Company seems to find it more natural to lie than to tell the truth when describing its panacea. In the advertising pamphlet sent out to boards of health and tuberculosis societies, Arthur V. Payne, M.D., makes this statement:

"Many eminent and broad-minded physicians prescribe Pulmonol and use it in their private practice as their own product . . ."

Of course this is a falsehood and its author knows it is a falsehood, but apparently he expects to "get away with it." In another booklet the concern says:

"We spent a year trying to get the doctors to use Pulmonol and finally had to give up the job."

Of the various claims made for this stuff, these are typical:

"It cleans out the lungs."
"Stops night sweats."
"Prevents hemorrhages."
"Strengthens the heart."
"Gives strength to resist disease."
"Cures the most stubborn coughs."

Like some other men in the consumption-cure business, A. V. Payne is shrewd enough to recommend, in his advertising matter, that those taking Pulmonol shall follow the rules laid down by reputable physicians for the treatment of tuberculosis; that, in addition to taking his nostrum, they shall live in the open air as much as possible, eat nourishing food and in other ways follow out the approved method of treating the disease. Such suggestions, coming from "patent medicine" exploiters are worthless, as every physician knows. The one reason, above all others, that causes the consumptive to fly to the quack is his belief, born of ignorance and the optimism that characterizes the disease, that the medicine he buys will relieve him of the necessity of following the strict regimen laid down by his physician.

There is an inborn belief amoung the laity that there is a specific drug for every disease—if the medical profession were only wise enough to discover it. The quack, either inferentially or directly, assures the public that he *has* found the specific; and the public believes him! It is the universal experience of those who have had much to do with consumptives that dietetic and hygienic measures are disregarded in direct proportion to the amount of medicine the sufferer takes. Herein lies the viciousness of the consumption cure. A. V. Payne may smugly "point with pride" to his "literature," in which he urges those who buy his nostrum to follow the rules laid down by scientific men in the treatment of tuberculosis, but he knows, unless he is more fool than knave, which we doubt, that such rules will not be followed, once the victim begins relying on Pulmonol.

SOME TESTIMONIALS INVESTIGATED

A few of the testimonials published by the Pulmonol Chemical Company have been investigated with the usual results. The testimonial-givers are, as always, divided into two classes; those who really had tuberculosis and those who did not have it. As we have said many times, it is useless to investigate fresh testimonials. Most of them are written in good faith and not until the cases have progressed further are the victims undeceived as to the efficiency of the nostrum. It is therefore necessary to wait a year or two before looking into testimonials of this class. We then find, invariably, that the consumptive who had relied on the nostrum is dead. This is what has been found in the case of Pulmonol testimonials.

One testimonial published by the Pulmonol concern was featured as an "Extraordinary Case." "We do not believe that there are many cases like it on record," says the booklet, which, after giving the testimonial, suggests that "The Committee on Tuberculosis will find this a most interesting case for its investigation." It will! The poor woman whose case is described therein has been dead for some years, and we have evidence that indicates that the Pulmonol Company continued to publish the testimonial not only after the death of the victim, but after that death had been specificially brought to the attention of A. V. Payne. A nice, ghoulish sort of business!

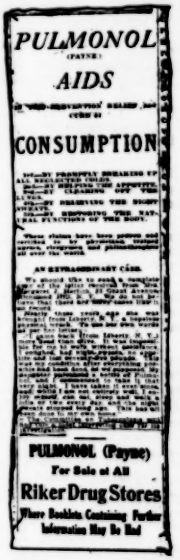

Fig. 1.—Photographic reproduction (reduced) of a typical Pulmonol newspaper advertisement. The woman whose testimonial appears in this advertisement died of consumption months before the advertisement appeared!

Another testimonial, published under the heading, "Unbiased Physician Recommends Pulmonol," was that purporting to come from a Brooklyn physician, who is alleged to have recommended Pulmonol to a tuberculous patient who was so nearly dead "that the priest was called in and the last rites were administered." The man took Pulmonol, says the booklet, "and is still taking it. He is not entirely well, but well enough to be one of the happiest men in Brooklyn." Not so; the poor fellow may be happy, but he is not in Brooklyn. He went the way of all consumptives who have reached the last stages of the disease.

Here are some other cases: Mrs. F. A. C—— testifies that she took seventeen bottles of Pulmonol "and was greatly benefited." This testimonial appears in a booklet entitled, "Fighting the White Plague, or Consumption, with Pulmonol." The inference, naturally, is that Mrs. F. A. C—— had been cured of consumption by the use of Pulmonol. The case was investigated and Mrs. C—— was found to be a strong, robust woman whose case had never been diagnosed as tuberculosis, but who just "knows she had it" because she coughed a great deal! And on such testimony as this is this wretched fraud sold to the consumptive.

In the same booklet Mrs. E. J. S—— says that her husband had "lung trouble." "He took six bottles of Pulmonol and it cured him." Here again, we note that no direct statement is made that the man has been cured of tuberculosis; but the inference is there. Investigation shows that Mr. E. J. S——, who is living and well, never had tuberculosis.

Mr. L. E. F—— also gives a testimonial that, inferentially, gives the impression that Pulmonol has cured him of consumption. Our investigation, however, shows that such is not the case, for poor F—— was one of those who really had tuberculosis. He is now dead.

V. 61
1913

There are a number mentioned in New and Nonofficial Remedies. It should be remembered that the administration of lactic acid germs should always be accompanied with carbohydrate food from which the germs can form the necessary lactic food.

4. Many pathologists believe that a considerable number of internal diseases are due to the absorption of poisonous material from the intestine. It is very probable that other poisons than indican are formed in the process of putrefaction, and it is probable that these poisons have much more serious effects than indican or indol.

BASS AND WATKINS TEST—THE HERMAN-PERUTZ TEST

To the Editor:—1. Please describe the Bass and Watkins rapid Widal test.

2. Please give the Herman-Perutz test for syphilis, and state whether it is reliable.

M. B. MCCAUSLAND, M.D., Imlay City, Mich.

ANSWER.—1. The Bass and Watkins method is published in text-books on clinical diagnosis. Reference may be made to Webster's "Diagnostic Methods," p. 588.

2. The Herman-Perutz method is described in THE JOURNAL, Feb. 18, 1911, p. 547, in an abstract of the original article in the *Medizinische Klinik*, Jan. 8, 1911. In a recent article by J. Kallos (*Deutsch. med. Wchnschr.*, Sept. 25, 1913, p. 1885), the direction is given not to let the mixture of serum and reagent stand more than twenty hours. The test seems to give reactions very similar to those of the Wassermann test, but in secondary syphilis it does not give a positive reaction so frequently. It should be used only as confirmatory to the Wassermann reaction.

ORGANISM OF WHOOPING-COUGH—FAVORITE METHOD FOR INJECTING SALVARSAN

To the Editor:—1. Has a specific organism been isolated for whooping-cough?

2. Which method is most in favor, the intravenous or the intramuscular injection of salvarsan?

P. E. LINEBACK, M.D., Anaconda, Mont.

ANSWER.—1. Such an organism was isolated by Bordet and Gengou a few years ago and is known as the Bordet-Gengou bacillus of pertussis. The following references may be consulted:

Bordet: The Microbe of Pertussis, *Brit. Med. Jour.*, Oct. 9, 1909.
Wolistein, M.: Bordet-Gengou Bacillus of Pertussis, *Jour. Exper. Med.*, January, 1909.
Mallory, F. B., and Hornor, A. A.: Pertussis: Histologic Lesion in Respiratory Tract, *Jour. Med. Research*, November, 1912.
Mallory, F. B.; Hornor, A. A., and Henderson, F. F.: Relation of Bordet-Gengou Bacillus to Lesions of Pertussis, *Jour. Med. Research*, March, 1913.

2. From a general view of the situation we should be inclined to say that the intravenous method has by far more adherents than the intramuscular in the injection of salvarsan. No definite statistics as to which method is most in favor are available.

DEATHS FROM EATING CHESTNUTS

To the Editor:—The newspapers recently contained a report of the death of a woman from poisoning by eating chestnuts. Please explain how chestnuts can be poisonous. S. T. A.

ANSWER.—We have communicated with the Bureau of Plant Industry in reference to this question, and have received the following statement: "It is true that deaths have occurred in the region where the chestnut blight is prevalent, and that the chestnuts from these trees have been eaten by the patients. Further than that we have now no definite information. The matter is under investigation by this bureau at the present time, and we hope soon to know at least the fundamental facts."

THE ROSENBACH AND AARON SIGNS

To the Editor:—Please describe (1) the Rosenbach sign and (2) the Aaron sign for appendicitis.

E. C. BRUSH, M.D., Zanesville, Ohio.

ANSWER.—1. We have been able to find three different signs known as the Rosenbach sign: (*a*) tremor of the upper lids in exophthalmic goiter when the eyes are gently closed; (*b*) loss of the abdominal reflex in cases of inflammation of the intestine, and (*c*) inability of neurasthenics to close the eyes immediately and completely on command.

2. We do not know what the Aaron sign is.

Miscellany

Medical Examinations After the French Revolution

On Aug. 18, 1792, the Constitutional Assembly of France passed a decree abolishing the medical faculties and societies and throwing open medical practice to any one who could pay for the privilege, the competitive examinations (*concours*) being mere farces. A chaotic state of affairs ensued, and had it not been for the law of 1794, establishing medical schools at Paris, Montpellier and Strasburg, to keep up the supply of army surgeons, France might in time have been under the absolute sway of quackery. On March 10, 1803, Napoleon, then first consul, put a stop to all this by a law which remained in force until Nov. 30, 1892, definitely establishing the status of physicians, surgeons, public health officers and irregular practitioners and requiring public examination of those seeking the right to practice. Dr. Ernest Wickersheimer, the scholarly librarian of the Académie de médecine (Paris), has just published an amusing protocol (*Paris médical*, 1913, x, 749) of an actual examination, held in 1804 in the department of l'Eure, by a jury presided over by Pierre Lassus of the Paris Faculté, which runs as follows:

First examination of Langlet, called La Chapelle, a self-styled "patented officer of health," in the presence of M. Lassus and the other members of the medical jury of l'Eure on the 8th Messidor of the year 12. Certain coarse and indecent remarks which he had made prior to his examination induced a member of the jury to attack him with the following questions:

Q. What is the clitoris?

A. The clitoris is the vagina, three parts together.

Q. Show us your stomach and your chest.

A. He showed one for the other.

Q. What is the eye?

A. The globe of the eye is composed of light; there is also extravasated blood and similar material.

Q. What is the ear?

A. The ear is the light which makes us understand things by its clearness, etc.

Q. How does a child come into the world?

A. A child comes as Adam, on its mouth, laboring the earth.

Q. What do you do when the anus is a blind alley?

A. If the man is dead, there is nothing more to do, still you might blow into the orifice to drive out the excrement by the mouth.

Q. What difference is there between a man and a woman?

A. The man has a virile member; the woman has two holes, the anus and the vagina.

Q. Where is the *fraise?*

A. In the umbilical bowel.

Q. Where is the pericranium?

A. In the placenta.

Q. Where is the atlas?

A. Among the vertebrae, or the shoulder-blade, or the spinal cord.

Q. Where is the peritoneum?

A. In the chest.

Q. What are the lungs?

A. They are the air, the breath of life.

Q. Where is the scrotum?

A. Near the anus and the vagina.

Q. What is the acromial apophysis?

A. It is the dislocation of the femur, or the round bone, or the tibia, of the fibula which comes out by its neck, a whirl, a sprain of cartilage.

Q. What is the great trochanter?

A. It is in the patella, tibia and fibula.

Q. Where is the sternum?

A. The sternum is above, inferior and within.

Q. Where are the atrabiliar capsules?

A. They are exterior.

Q. Where are the kidneys?

A. They are surcingular, exterior or above the girdle.

Q. Where are the suprarenal capsules?

A. Upon the kidneys.

Q. Where is the spleen?

A. Between the lungs and the livers, in the chest, where the livers have several branches.

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Q. Where is the thymus?
A. I am not a physician.
Q. Where are the cuneiform bones?
A. I give it up.
Q. Where is the pelvis?
A. The pelvis is the woman's region and nature.
Q. What is labor (*accouchement*)?
A. When the accouchement is for the time liquid and dilated, the fisobis presenting itself in the placenta, when the woman is in childbirth, her husband is scared to death and the woman about to be delivered has to remain in bed for six weeks, say the authors.
Q. After that what happens?
A. The clitoris being swollen with chagrin, prevents the woman from being delivered, the woman not proceeding in her trouble and the child not laboring for itself, cannot come into the world until the end of six weeks, on account of chagrin.
Q. What do you notice at the moment of delivery?
A. At the moment when a woman is delivered, the fundament enlarges and, for proof, I have seen a child and the excrement together in my hand.
Q. What are the ovaries? Where are they placed?
A. I renounce.

Second examination of Langelet La Chapelle, in the presence of the prefect of the department of l'Eure, Evrux, the 9th Messidor of the year 12.

Q. What is anatomy?
A. It comprises all the things of the body.
Q. How is the skeleton divided?
A. It is divided by the skull, occipital and cubital.
Q. What is the shoulder?
A. The shoulder is composed of the shoulder-blade and clavicle, forearm, ulna and radius.
Q. What is the wrist?
A. It is composed of the neck of the membrane.
Q. Describe the lower extremities.
A. It is composed of the thigh, patella, tibia, fibula, tarsus and metatarsus.
Q. What are the vertebrae?
A. All the vertebrae are of use. They are the essentials of man and his force.
Q. What are the loins?
A. I do not remember.
Q. How many ribs are there?
A. There are ten.
Q. What do you call the anterior bone of the chest?
A. It is the os sacrum.
Q. What is the peritoneum?
A. I do not remember.
Q. What are the lungs?
A. The breath, in the belly.
Q. Where is the heart?
A. In the chest.
Q. Where is the liver?
A. As it is in pigs.
Q. How many intestines are there?
A. Two; the large and the small.
Q. What is the cesarean operation?
A. It was Caesar who came into the world that way.
Q. How have you performed it?
A. By puncture, the bistoury being underneath the last rib, by an opening of four inches. After the first cicatrix, I opened, I took the infant in its receptacle, I placed the receptacle on the thighs of the woman, I sewed it up and put it back into the abdomen and I sewed the first cicatrix with an ordinary needle and a simple thread. The child lived; the bowels which came out were put back into the belly. I did this operation because the woman was feeble and without hope, and no pulse to be felt. She recovered without fever, kept her diet for four or five days; I dressed her with sugared wine. Six weeks afterward the woman was dancing in the assembly. The swelling had suppurated; I treated it with camphorated brandy; the swelling or thrombus still remains. This woman had a natural delivery one year before; a year afterward she was delivered very happily at the foot of a tree.
Q. How do you recognize a dislocation?
A. By the moving joints.
Q. How is a dislocated arm reduced?
A. I reduce it alone. I lift the arm and I reduce it with the finger in its proper place.
Q. What is the descent?
A. In the testicles, in the ring of the isles.
Q. What is the serotum?
A. It is a part of women. It is placed at the fundament or anus. It is not an opening, it is a round part; it contains the vagina; it serves them for sitting down.
Q. Where is the spleen?
A. Above the womb.
Q. Where is the cerebellum?
A. In the head, in front.
Q. Describe the ear.
A. The ear is composed of temporals, occiput and parietals.
Q. Where are the seminal vesicles?
A. In the virile member, the bladder. In women, it is higher than in men.

The examiners in this droll questionnaire clearly understood their business. As it was plain that the candidate did not even know the parts of his own body, we can hardly blame them for exposing the extent of his ignorance by asking him about parts which do not exist. Dr. Wickersheimer does not state whether or not the candidate was successful, but the result may be inferred.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

PRESENT ACTIVITIES IN PUBLIC HEALTH

The growing interest in public health is illustrated by the attention paid to this question by life-insurance companies and other business organizations, and the establishment of departments of public health by some of the state universities. Many of the insurance companies, large industrial concerns and special societies also issue pamphlets on various specific topics.

REGISTRATION OF VITAL PHENOMENA

Probably the most intimate connection between public health and business so far established is that between life insurance and vital statistics. Mr. Louis I. Dublin, statistician for the Metropolitan Life Insurance Company, recently delivered an address before the annual conference of health officers of Indiana, which has been reprinted in pamphlet form. After discussing the value of birth and death registration from a public point of view, Mr. Dublin takes up their value from a personal and commercial point of view, showing by cases from the records of life-insurance companies the importance and value of birth, death and marriage registration, and the commercial value of properly kept records. He concludes his paper by saying, "I hope that I have indicated the extent and character of the losses which result from neglect of thoroughly registering vital phenomena. If communities were to realize that they are called on ultimately to meet these losses, I think that we would have an awakening of public interest in careful civic accounting of human life. . . . . In life-insurance companies alone, fully one-fourth of the disputes would never arise were adequate records on hand. The saving of losses due to present litigation could then be returned as larger benefits to our clients, and would remove many causes for dissatisfaction. We cannot regard these losses as anything more than downright waste."

MISSOURI DEPARTMENT OF PREVENTIVE MEDICINE

The University of Missouri, like the University of Wisconsin, has established a department of public health. In Missouri it is known as the Department of Preventive Medicine. This department offers to furnish to any citizen of Missouri, on request, practical information regarding the prevention of disease. A laboratory is also equipped to make any necessary examinations, these services being free of charge to the people of the state. Three pamphlets have been issued so far, one

V. 61
1913

on "Bacteria and Disease," by Dr. O. W. H. Mitchell, assistant professor of pathology and bacteriology; and pamphlets on "Typhoid Fever" and "Contagious Diseases Among Schoolchildren," by Dr. W. J. Calvert, professor of preventive medicine. The last-named pamphlet has just been issued. It contains three chapters, one on "The Nature of Communicable Diseases, and the Ways in Which They Are Spread," one on "The Symptoms of the More Common Infectious Diseases," and one on "School Hygiene," under the head of "Cleanliness, Pure Water, Ventilation and Heating." The recognition of public health as a legitimate field for the state university, and the establishment of a department of preventive medicine with a laboratory free to the citizens of the state, is a marked step forward in the social program for the prevention of disease. The recognition of the closely allied facts that prevention of disease is a social problem, and that it can be solved only through public education, is most important. In these two suggestions lies the solution of the problem of preventable disease.

PURIFICATION OF WATER-SUPPLIES

The United States Geological Survey has issued "Water-Supply Paper 315," which is published as H. R. Document 1236, entitled "The Purification of Public Water-Supplies." In it are discussed the sources of water-supply for cities in the United States. In the northern and middle Atlantic states the use of lake and spring water is common. In the more southerly states waters from rivers are more commonly used, especially in the Mississippi and Ohio valleys. In nearly 400 cities, 40 per cent. of the water-supply is drawn from wells, 25 per cent. from lakes, ponds or springs, 24 per cent. from rivers, and 11 per cent. from mountain streams. The various sources of city water-supply are discussed, and the development of water-works systems in the United States, water consumption, typhoid fever in the United States and water purification, with an exhaustive discussion of methods and comparative values.

The section on typhoid fever shows that in 1900 there were over 35,000 deaths from this disease, and that in 1910 the typhoid fever death-rate in the forty-eight cities having a population of 100,000 or over was 23.3 per hundred thousand. Under the main subject of "Water Purification" the methods of slow and rapid sand filtration and the different means of sterilization are discussed, with illustrations showing water-purification plants in different cities.

ARMY HOSPITAL REPORT

The medical department of the United States Army maintains a general hospital at Ft. Bayard, N. Mex. The report of this hospital, just issued, shows that 928 patients were treated there during the past year; 56 deaths occurred, 46 of which were from tuberculosis; 686 patients were admitted during the year, of whom 154 were returned to duty; of 672 cases of pulmonary tuberculosis 46 were incipient, 288 were moderately advanced, 337 were far advanced, and one was a case of acute miliary tuberculosis. Of these, 32 patients were apparently cured, 77 were arrested, 352 were improved, 160 were unimproved and 51 died.

PAMPHLETS ON PUBLIC HEALTH AND ALLIED TOPICS

The most interesting literature on public health questions is to be found at present in pamphlets and bulletins rather than in books or journals. Most of the state boards of health publish pamphlets on various subjects for popular distribution. The variety of subject, method of treatment and material found in these pamphlets constitutes one of their most interesting features.

NORTH CAROLINA HEALTH BULLETIN

The *Health Bulletin of the North Carolina State Board of Health* for October shows on the first page photographs of eight babies which have taken prizes at baby contests in various Southern states, and the announcement, "Watch this page for North Carolina prize-winners after the state fair." The cover also contains a list of pamphlets and leaflets printed by the state board for free distribution. This list includes such subjects as care and feeding of the babies, flies and mosquitoes, hookworm, malaria, tuberculosis and vital statistics. An article from the *Progressive Farmer*, "Why I am Down on Patent Medicines," gives practical advice to the reader on this subject. The writer says, "I recognize their (patent medicines) harm as any one may do if she cares to read the literature published by the United States government and the American Medical Association." A pertinent article on freight-rates, a subject which no one would suspect had a very intimate connection with health matters, shows that 16,000 of the 40,000 deaths in North Carolina last year were preventable, and that the 16,000 preventable deaths involved a loss of over $27,000,000 to the state; that of the 80,000 cases of illness in North Carolina last year 40,000 were preventable, and that this involved an additional loss of $18,000,000, or a total loss of $45,000,000, as the preventable health waste of the state for last year. The writer then continues, "When it is estimated that our state loses as much as $5,000,000 annually in excessive freight-rates we hold conventions and conferences, and we organize and call extra sessions of the legislature; but when we lose $45,000,000 worth of our best North Carolina citizenship no one gets excited, no one talks of an extra session. Why?" The writer then shows that the principal trouble is that the people do not realize the amount of the loss through preventable diseases and the fact that this is preventable. He assumes correctly that when these two facts are recognized by the people, "we will begin public health work in earnest. As it is now, there is practically no public health work done in over 85 per cent. of the counties in the state."

VERMONT BULLETIN

The *Bulletin of the Vermont State Board of Health* for September contains the proceedings of the fifteenth annual school of instructions for health officers, which has been recognized as a state institution for a number of years, the state paying the expenses of all health officers attending. Different topics were presented by officers of the United States Public Health Service and of the State Department of Health, followed by discussion of the duties of local health officers. Two hundred and thirteen health officers were present.

MICHIGAN PUBLIC HEALTH BULLETIN

Public Health, the bulletin of the Michigan State Board of Health, for September is devoted largely to articles on school hygiene. Charles F. Tambling of the Central State Normal School discusses "The Normal School in Sanitary and Civic Education." Charles McKinney of the Michigan State Normal School writes on "Sex Hygiene in the Public Schools." After discussing the question in general terms he summarizes the difficulties under four heads, namely, the opposition of present public opinion, the lack of teachers capable of giving suitable instruction at present, the lack of a well-thought-out and thoroughly tested course of study, and the objection to the teaching of sex hygiene in the elementary schools under present conditions. The first and the fourth objections are not especially weighty. The second and third, however, are deserving of the most careful consideration. The value or harmfulness of a course of instruction in sex hygiene or in any other subject in the public schools depends entirely on the carefulness with which a proper course of instruction is planned and on the ability and knowledge of the teachers who will have charge of the course. Even the most ardent advocates of teaching sex hygiene in the public schools must admit that as yet no carefully thought-out course of instruction, suitable for intermediate, primary and high schools has been prepared, and that in many cases the teachers are nearly as ignorant on this subject as are the pupils. McKinney says that until recently no special courses in sex physiology and hygiene were offered in any of the colleges or normal schools of the country; that only one normal college so far offers a course which would probably fit a person to teach this subject; that the literature on the subject, aside from controversal

and propaganda pamphlets, is scarce, and that even what there is is of doubtful scientific value and decidedly emotional. McKinney strongly advocates the instruction of sex physiology in the public schools as soon as the right conditions can be secured, and outlines the following steps as necessary for this result: Continued agitation and enlightenment of the public regarding the social evil, the inauguration of proper courses in colleges and normal schools for the training of teachers in sex hygiene, the initiation of such courses in high schools before separate classes as a part of the course in physiology or physical training, and the extension of such instruction in the grammar and intermediate grades as fast as the courses and the teachers can be prepared for suitable instruction. McKinney's article is a thoughtful and conservative expression of opinion from one qualified to speak with authority. Other articles on "Rural School Hygiene," "Medical Inspection of Schools," "Schoolroom Cleanliness" and "School Water-Supply," make the number a particularly interesting one.

A CITY'S INVESTIGATION OF ITS PUBLIC HEALTH

The present interest in social and civic conditions in American cities is no longer confined to the larger cities, but is being taken up in smaller towns. The citizens of Newburgh, N. Y., wanted to learn the facts regarding their city and its administration. First proposed by a local minister and later by the local Associated Charities, a survey committee of fifty citizens was ultimately organized which asked the cooperation of the department of surveys and exhibits of the Russell Sage Foundation. With the cooperation of a number of public workers, investigations were undertaken in the public schools on public health, housing, delinquency, public library, recreation, industrial conditions and municipal administration, the survey being in each case carried on under the supervision of an expert in each branch.

The investigation in the public health situation in Newburgh shows the weakness of much of our municipal health organization. The report criticizes the organization of the health department, which consists of a board of seven members, with the health officer as the executive and servant of the board, instead of an expert administrator responsible for the work of the department. Another serious difficulty is the fact that the health officer is expected to give only an hour a day to the work of the department. One is not surprised at this situation when it is learned that Newburgh spends only 12 cents per capita per year for health purposes, or about 1 cent a month or a quarter of a cent a week to guard the health of each citizen. Certainly not much can be expected for this sum. The registration of births and deaths and the reporting of diseases is also criticized, more on account of the defects in the system than on account of personal shortcomings. Newburgh, it seems, is known as a "typhoid town," and the survey finds ample evidence to justify this designation. In the opinion of the inspector the presence of typhoid is entirely inexcusable and represents an economic loss to the city of about $40,000,000 a year. While the sewer system of the city is good, no one seems to know anything about the condition of the milk-supply, with the result that one infant out of every eight dies during the first year of life.

Tuberculosis, venereal diseases, medical inspection of schools, the lack of suitable hospitals, hospital equipment, street-cleaning, occupational diseases and other important subjects are also gone into in the report. The recommendation made is for a full-time health officer with a suitable salary and with proper authority and responsibility, with such assistance as he may need to organize and operate a modern municipal department of health. The report is summarized so that the issue is put plainly before the citizens of Newburgh, that the securing of a proper department of health and the prevention of diseases and the saving of life is simply a question of finance. The report on housing is also of interest from the public health point of view, covering lodging-houses, sewer connections, danger from fires, etc. The entire report is of interest as an example of the careful scrutiny to which all fields of municipal activity are now being subjected.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, January 3. Sec., Dr. John Wix Thomas, 200 National Bank of Arizona Bldg., Phoenix.

COLORADO: State Capitol, Denver, January 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DELAWARE: State Society and Homeopathic, Dover and Wilmington, Dec. 9-11. Secretary of the Medical Council, Dr. Henry W. Briggs, 1026 Jackson St., Wilmington.

IOWA: The Capitol Bldg., Des Moines, January 6-8. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

KENTUCKY: Armory, Louisville, Dec. 11-13. Sec., Dr. J. N. McCormack, Bowling Green.

MARYLAND: Regular, 1211 Cathedral St., Baltimore, Dec. 9. Sec., Dr. J. McP. Scott, Hagerstown.

MINNESOTA: State University, Minneapolis, January 6-9. Sec., Dr. Thos. S. McDavitt, 814 Lowry Bldg., St. Paul.

NEW HAMPSHIRE: State House, Concord, January 6-7. Regent, Mr. H. C. Morrison, State House, Concord.

NORTH DAKOTA: Grand Forks, January 6. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, Dec. 9-11. Sec., Dr. Geo. H. Matson, State House.

OREGON: Portland, January 6-8. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

PENNSYLVANIA: Philadelphia, Dec. 2-4. Sec., Mr. Nathan C. Schaeffer, Harrisburg.

VIRGINIA: Richmond, Dec. 16-19. Sec., Dr. Herbert Old, Norfolk.

WASHINGTON: Spokane, January 6-12. Sec., Dr. F. P. Witter, Traders' Block, Spokane.

Correction of West Virginia July Examination Report

In the report of the examination held by the West Virginia Board in July, 1913, one candidate was reported as a graduate of the University of Louisville. A foot-note stated that information from the college did not indicate such graduation. A later report from the West Virginia Board states that the candidate should have been given as a graduate of the Chicago College of Medicine and Surgery.

Vermont July Report

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Examiners, reports the written examination held at Burlington, July 8-10, 1913. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 23, all of whom passed. One candidate was licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Tufts College Medical School	(1909)	85.9
Albany Medical College	(1911)	81.7
Columbia Univ., Coll. of Phys. and Surgs., N. Y.	(1913)	91.4
University of Vermont	(1911) 77.2; (1912) 80, 92.8; (1913) 77.5, 78.1, 79.5, 79.8, 80.1, 81, 81.7, 81.9, 82.1, 83.5, 84.9, 85, 85.6, 86.1, 88.1, 92.7.	
University of Naples	(1904)	80.2

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Baltimore Medical College	(1896)	Maine

Missouri June Report

Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, reports the written and oral examination held at St. Louis, June 16-18, 1913. The number of subjects examined in was 14; total number of questions asked, 210; percentage required to pass, 75. The total number of candidates examined was 160, of whom 144 passed and 16 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
Howard University, D. C.	(1911)	80.8
University of Illinois	(1913)	87.1, 88.1
Rush Medical College	(1912)	86.1, 89.6
Chicago College of Med. & Surg.	(1913) 87.2 (1912)	88.3
Hering Medical College	(1913)	85.6
Drake University	(1913)	87.2
Tulane University, New Orleans	(1913)	86.2, 88.2
Johns Hopkins University	(1913)	87.3

V. 61
1913

Harvard Medical School.....(1909) 82.3
Barnes Medical College, St. Louis.....(1905) 75
Hahnemann Medical College, Kansas City.....(1913) 84.7
St. Louis Coll. of Phys. & Surg..... (1909) 75; (1913) 76.8, 80.3
Nat. Univ. of Arts & Science, St. Louis..... (1913) 75.3, 77.8
Ensworth Medical College, St. Louis.....(1913) 77.8, 86.6
American Medical College, St. Louis (1912) 77.2; (1913) 75, 75, 75, 75.3, 75.6, 75.8, 77.5, 77.9, 79.1, 79.5, 80.6, 82.4, 83.3, 84.3, 84.4, 85, 85.6, 86.5.
University Medical College, Kansas City (1913) 75, 75, 77.4, 78.4, 79.5, 79.9, 81.2, 82, 82.7, 83.2, 83.6, 83.9, 84.5, 85.1, 85.7, 86.3, 86.5, 86.8, 87, 87.3.
Washington University, St. Louis (1912) 83.2, 86.5; (1913) 75, 77.8, 79.2, 80.6, 80.8, 82.3, 82.3, 82.9, 83.6, 83.8, 84.1, 84.8, 85.2, 85.3, 85.3, 86.2, 87.1, 88.1, 88.4, 88.8, 88.9, 88.9, 89, 91.2, 93.3.
St. Louis University (1912) 81.8, 86.1; (1913) 75, 75, 75.5, 77.2, 77.6, 78.3, 78.5, 78.6, 78.7, 78.8, 79.2, 79.3, 79.7, 80.1, 80.5, 80.5, 81.2, 81.3, 81.3, 82, 83.1, 83.3, 83.3, 83.6, 83.6, 84, 84, 84.1, 84.2, 84.3, 84.3, 85.1, 85.1, 85.2, 85.3, 85.4, 85.6, 85.7, 86.2, 86.7, 86.8, 87.1, 87.3, 87.3, 87.8, 88.1, 88.1, 89.4, 89.5, 93.1.
Columbia University, Coll. of Phys. & Surg., N. Y. (1913) 85.3
Eclectic Medical College, Cincinnati.....(1913) 89.3
Jefferson Medical College.....(1872) 75
Meharry Medical College.....(1913) 82

FAILED

University of Arkansas.....(1912) 71.2
College of Physicians and Surgeons, Keokuk.....(1893) 51.6
Ensworth Medical College, St. Louis.....(1912) 64.4
St. Louis College of Phys. and Surgs. (1913) 53.3, 59.1, 66.2, 68.1
American Medical College, St. Louis (1909) 58.2; (1912) 72.5; (1913) 67.6, 71.3.
University Medical College, Kansas City (1911) 62.6; (1913) 69.5, 72.
National University of Arts and Science.....(1913) 72.3
Meharry Medical College.....(1913) 62.1

Book Notices

MASSAGE. Its Principles and Technic. By Max Böhm, M.D., Edited, with an Introduction, by Charles F. Painter, M.D., Professor of Orthopedic Surgery at Tufts College Medical School, Boston. Cloth. Price $1.75. Pp. 91, with 97 illustrations. Philadelphia: W. B. Saunders Company, 1913.

Considering the fact that literature on the technic of massage, particularly in English, is very rare one will acknowledge that the author is filling a want. The book is short, to the point and ought to be well received. There is first a chapter concerning general preparations and length of sitting, as well as definitions of the various manipulations; then well-illustrated chapters on the massage of joints, muscles, nerves and skin, abdomen and the general body massage. There are also a few anatomic pictures illustrating why it should be done just so. One might, of course, find reasons for difference of opinion. On page 38 there is a description and illustration (Fig. 21) of the way in which by raising the arm, one can get at the capsule of the shoulder-joint and manipulate it, in case it is thickened. Of late, writers on massage advise against vigorous manipulation in the axilla, as one might harm the brachial plexus, and we are inclined to endorse that opinion.

ANAPHYLAXIS. By Charles Richet, Professor in the Faculty of Medicine, Paris. Authorized Translation by J. Murray Bligh, M.D., Medical Registrar to the Liverpool Royal Infirmary with a Preface by T. R. Bradshaw, B.A., M.D., F.R.C.P. Cloth. Price 3 shillings 6 pence. London: Constable & Co., 1913.

To Richet belongs the credit of first giving to the profession a comprehensive account of the main phenomena designated by "anaphylaxis," the word coined by him to signify the opposite of protection or phylaxis. Because there appeared to develop an increased sensitiveness to a poison after previous injection of that poison this new word seemed quite appropriate. We now know, paradoxical as it may seem, especially in the light of the symptoms, that there is no actual increase in susceptibility to poisons in anaphylaxis, but an increase in the power of the body of the so-called sensitive animal to split the sensitizing protein into poisons. Failure to distinguish clearly between the original meaning of anaphylaxis and the real nature of the condition to which it is now applied is a serious obstacle to a clear understanding of what is written and said about this subject. This distinction must be kept in mind constantly in reading Richet's account of the various phases of anaphylaxis, or perhaps better allergy. All students of allergy will welcome this presentation of the subject by one who has contributed so much to our knowledge of it. Generally speaking, his views accord with those current in American and German literature. Only little effort is required to accommodate one's self to Richet's nomenclature. In places the statements are abrupt and even obscure, perhaps because of the translation; but examples of the masterly lucidity of the French are not wanting. The physician who is not already thoroughly familiar with the general facts in regard to anaphylaxis will find this a rather difficult book to understand, as the author frequently appears to assume a considerable knowledge on the part of the reader. It is annoying that there is no index and it is difficult to see why the bibliography in the English edition should have been limited to the years 1910, 1911 and part of 1912.

DIGEST OF COMMENTS ON THE PHARMACOPEIA OF THE UNITED STATES OF AMERICA (EIGHTH DECENNIAL REVISION) AND ON THE NATIONAL FORMULARY (THIRD EDITION). For the Year Ending December, 1911. By Murray Galt Motter and Martin I. Wilbert. Paper. Pp. 683. Hygienic Laboratory, Bulletin No. 87. Washington: Government Printing Office, 1913.

In the period covered by this, the seventh in the series of "Digests," the critical character of the comments on the German Pharmacopeia might be taken to indicate that the makers of pharmacopeias must in the future cater to a more and more discriminating constituency. This attitude on the part of users of pharmacopeias is still further emphasized by the growing demand for a limited materia medica and, by inference, the limitation of the scope of the pharmacopeia to substances of recognized therapeutic efficacy and substances which, to some degree at least, lend themselves to adequate standardization, whether chemical or physiologic. Coupled with this is the demand, now become international, for greater uniformity in the matter of nomenclature and of standards, together with the tests for purity and identity, and the method of making these tests, on which the standards are based. These tendencies are well reflected in this volume, nearly two-thirds of which is devoted to comments on official articles. The twenty pages or more devoted to the subject of clinical tests should prove a real aid to those physicians and pharmacists who have the time, the inclination and the facilities for clinical laboratory work, while a score of refences to the literature on disinfectants presage the coming of light and order in the somewhat chaotic field of modern preventive medicine.

BEHANDLUNG DER ANGEBORENEN UND ERWORBENEN GEHIRNKRANKHEITEN MIT HILFE DES BALKENSTICHES. Von Prof. Dr. G. Anton, Direktor der königl. Klinik für Geistes- und Nervenkrankheiten in Halle, a.S., und Prof. F. G. von Bramann, Direktor der königl. Chirurg. Universitätsklinik in Halle a.S. Paper. Price, 9 marks. Pp. 188, with 54 illustrations. Berlin: S. Karger, 1913.

In this monograph are described the underlying principles, the technic and the results, in a variety of cases, of efforts to relieve intracranial pressure by puncture of the corpus callosum. The clinical histories of the cases in which the procedure has been used, which represent hydrocephalus, hypophyseal tumors, tumors of the brain and cysticercus, are given in full. On the basis of the experience here recorded the indications, contra-indications and possible dangers of the operation are discussed. It appears that in inoperable intracranial tumor the pain and the distress of the patient may be greatly relieved by puncture of the callosum, and that good results have been obtained in other cases of intracranial pressure. The monograph consequently is of interest and importance to surgeons.

PROTECTIVE INOCULATION AGAINST CHOLERA. By W. M. Haffkine, Bacteriologist with the Government of India. Paper. Price, 4 shillings 6 pence net. Pp. 98. Calcutta: Thacker, Spink & Co., 1913.

The author gives an account of his work in the preparation of an anticholera vaccine and of its application to the prevention of cholera in India. This occupies the first two parts of the book. The third deals with the effects of devitalized "Cholera Vaccine II," as he calls his preparation of living cholera germs. He regards it as demonstrated that dead cholera germs will produce immune bodies in the human organism; but experience must show whether or not the preparation will

protect man against cholera germs taken into the intestinal tract. Experiments to test this point should soon be made, since the greater convenience of the devitalized vaccine will render it much more useful than the living germs in immunizing large numbers of people.

WHAT HEART PATIENTS SHOULD KNOW AND DO. Suggestions for Persons Suffering from Diseases of the Heart and Blood-Vessels, Exercise, Diet, Prevention, etc., and Advice as to the Regulation of Their Lives. By James Henry Homan, M.D., Special Lecturer on Cardiovascular Diseases in the University of Georgia. Cloth. Price, $1.20 net. Pp. 204. New York: Dodd, Mead & Co., 1913.

The author has written a book of advice ostensibly for patients suffering from heart-disease, but its scope is so diffuse that it can be regarded as advice applicable to any one quite as much as to the sufferer from heart-disease. The book is best described by the following headings: "Relaxation," "Clothing," "Climate and Environment," "Exercise," "Diet," "Bodily Waste," Blood-Pressure," "Obesity," and the advice given by the author is conservative and good. It is not better than many books already on the market giving general hygienic advice, and the literary style is not so good as some of the others.

GRUNDRISS DER FERMENTMETHODEN. Ein Lehrbuch für Mediziner, Chemiker und Botaniker. Von Professor Dr. Julius Wohlgemuth, Assistent am Kgl. Pathologischen Institut der Universität Berlin. Paper. Price 10 marks. Pp. 355. Berlin: Julius Springer, 1913.

The purpose of this book is to describe clearly all the methods that have proved useful in the study of ferments. The intention of the author has been to meet the needs of the practical laboratory worker, and the directions are given with much care and detail with the view of helping those who are less experienced. In the general part the nature of ferments and the fundamental principles of their study are discussed in a clear and simple way; in the special part, the methods for the different classes of ferments are given. In view of the growing importance of the study of ferments in diagnosis, the book will interest all physicians who are in touch with the development of recent work.

Medicolegal

Breach of Contract to Furnish Employee Medical Attention

(Thomas vs. Tennessee Coal, Iron & Railroad Co. (Ala.), 62 So. R. 627)

The Supreme Court of Alabama reverses a judgment rendered in favor of the defendant, which was sued for damages for failure to furnish the plaintiff necessary medical attention when he became ill with severe cramps and pain in the abdomen, while in the defendant's employ. According to the plaintiff's testimony, which did not seem to be in any way contradicted, the defendant's agent assured him, when he entered the defendant's service, that for the payment of $1 a month, "in case that you or any of your family gets sick, why, the company doctors will give you service." It was not disputed that the defendant had in its employ at that time, and at the time that the plaintiff became ill and required medical service, a practicing physician charged with the duty of giving needed medical service to its employees at its plant at which the plaintiff was employed. The physician's contract with the defendant, however, was to serve employees and their families at their homes within a restricted territory only, whereas the plaintiff's residence, where he was taken sick, and where the physician was called on to visit him, lay a mile or more outside of that territory. Still it did not appear that the plaintiff was informed of this restriction, and it was not denied that the defendant deducted the stipulated fee of $1 a month from the plaintiff's wages as consideration for the medical service promised to him and his family.

It resulted, the court says, that, while the physician was not obligated to either the plaintiff or the defendant to render the service requested in this particular case, the defendant was none the less obligated to the plaintiff to have the physician do so; at least the contract between them was fairly open to that interpretation by the jury, and fairly open to the interpretation, also, that in case of need the company's physician should be summoned by a call made immediately on him, and not mediately through some other company official. For if the company's physician, provided for such an emergency as here arose, failed or refused to respond to the plaintiff's call, the plaintiff was certainly under no duty to wait and take the matter up with the company for negotiation and adjustment, and, perhaps, die the meanwhile of inattention and neglect, as it seems he would very likely have done.

So far as the defendant's obligation to the plaintiff was concerned, the limited service it required of its regular physician, the fact that that physician was under no duty to travel outside of a designated territory to serve the plaintiff at his need, was wholly immaterial to the case, in the absence of notice to the plaintiff of such a restriction when he was contracting and paying for a service not thus limited. It might, indeed, be reasonably presumed that for mere service at the plant or infirmary in case of injury he would not have chosen to pay the monthly fee; and, without informing the plaintiff of the stated restriction, the defendant had no right to take his money, and at the same time fail to provide for needed medical service to him at the hands of its regular physician.

This was the breach averred in one count of the complaint, and there was evidence before the jury to support it. The breach charged was a breach by the defendant, not by the physician, and the physician's refusal to attend the plaintiff was, in law, a failure by the defendant to discharge its duty to the plaintiff, namely, to arrange with its regular physician to attend him in sickness, and to actually effect such attendance by that antecedent provision. The trial court erred, therefore, in instructing the jury to find for the defendant, and its judgment must be reversed.

Construction and Validity of Law Prohibiting Obnoxious Disease and Deformity Exhibitions

(People vs. Kennedy et al. (Mich.), 141 N. W. R. 887)

The Supreme Court of Michigan affirms a conviction of the defendants under the Michigan statute entitled "An act to prohibit, discourage and punish the exhibition of deformed human beings, diseased or deformed human bodies, or parts thereof, or the representations of the same, for any other than purely medical purposes." The prosecution was under Section 2, which provides. "It shall be unlawful for any person or persons to so expose or exhibit in museums or elsewhere diseased or deformed human bodies, or parts thereof, or representations of the same, which would be indecent in the case of a living person, except as used for scientific purposes before members of the medical profession or medical classes."

It appeared that the defendants were engaged in the practice of medicine in the city of Detroit and occupied the three upper floors of a building. At the entrance to their offices was a sign reading, "Doctors K. & K. Museum." On the upper or fourth floor, contained in cases, were representations, in wax or other substance, of portions of human bodies of both sexes described within the prohibition of the statute. The complaining witness, on application, went up in company with the defendants' office boy, who, under the direction of the defendants, occasionally took people up to the fourth floor, opened the door for them, and turned on the light. Those taken up by him were always adults and only one at a time. The defendants contended that for years this collection had been stored in the attic of another building not accessible to anybody; that, after they occupied their present location, they moved it from the attic, had the different pieces painted and mounted, and placed them on this top floor "so that they could be seen favorably, in case we wanted to sell them"; that they tried at different times to make a sale; that they were not exhibited to the public. One of them testified. "We do

V. 61
1913

not exhibit this stuff to the public. Once in a while if a person calls, we send them up. Sometimes we refuse people."

It was argued that Section 2 is unconstitutional because not within the scope of the title of the act, and because the offense charged in that section is not embodied in the enacting clause. But, the court says, as appears from the entitling of this act, it is a police regulation clearly within the power of the legislature, and was enacted to prohibit, discourage and punish the exhibitions therein described. The objection was without merit for the reason that the exhibition of the representations of the parts of the human body prohibited by Section 2 of the statute charged and described in the complaint was clearly within the terms of the entitling of the act. The exhibition prohibited by this section of the statute might be either public or private and includes an exposure to a single individual.

The construction of this portion of the statute is one of first ihtention before this court, and it will be proper to say that the defendants' contention was that the legislative intent in this statute was to prohibit the exhibition in public of the prohibited subjects, with or without charge, and that the words "exhibition," "expose," and "exhibit" should be construed in harmony with such intent, and the jury should have been so instructed. But the court does not think that Section 2 should be so construed. The legislature intended by this section to prohibit the exposure of these subjects in public or in private to any person or persons, "except as used for scientific purposes before members of the medical profession or medical classes." In the court's opinion it is a statute enacted in the interest of morality and decency. The terms of the statute are not technical, and the words used should be given their ordinary and usual meaning.

Society Proceedings

COMING MEETINGS

American Physiological Society, Philadelphia, Dec. 27-29.
Society of American Bacteriologists, New York, Dec. 31-Jan. 2.
Southern Surgical and Gynecological Assn., Atlanta, Dec. 16-18.
Western Surgical Association, St. Louis, Dec. 19-20.

CHICAGO MEDICAL SOCIETY

Regular Meeting, held Nov. 12, 1913

The President, DR. CHARLES P. CALDWELL, in the Chair

Relations of, and the Lesions Produced by, Various Forms of Streptococci, with Special Reference to Arthritis

DR. E. C. ROSENOW: About a year ago I became interested in the question of the transmutation of the pneumococci and streptococci, or the various organisms of the streptococcus group. It had been known previously that certain streptococci may take on cultural features and other properties quite different from those they had when first isolated. Indeed, the form of endocarditis which we have known clinically as chronic septic endocarditis is caused by a streptococcus, the so-called *Streptococcus viridans*, which by animal passage can regularly be converted into pneumococci. It is generally considered that the *Streptococcus viridans* is an intermediate organism between pneumococci, on the one hand, and streptococci on the other. I felt that it might be possible for a typical pneumococcus, for instance, to be converted into a typical streptococcus, and this has been done. The transformation is so complete that I have no hesitation in saying that if a bacteriologist can differentiate a typical pneumococcus from a typical streptococcus, then it is possible to transform one into the other, and as we transform pneumococci into streptococci there are intermediate states and intermediate organisms. At a certain stage in the transformation of one organism into another — the hemolytic streptococcus, for instance, into the *Streptococcus viridans* — it behaves culturally and looks like the *Streptococcus viridans*, when injected into rabbits it will produce the lesions more or less characteristic of that organism, producing a typical endocarditis, and that of a type similar to the one produced by the organism as isolated in the case of the chronic septic endocarditis. When you increase the virulence of this organism somewhat, it will take on cultural and other features resembling the organism isolated from cases of rheumatism, and as you increase its virulence still further it will take on the characteristics of a pneumococcus.

We know that hemolytic streptococci have a marked affinity, experimentally, for the joints of animals, and we know, too, that it is likely that hemolytic streptococci have a marked affinity for the joints in man. A typical hemolytic streptococcus was isolated originally from a case of tonsillitis. That organism, when injected into animals, showed a marked affinity for the joints, producing an arthritis repeatedly. A blood-vessel had in it a clot containing rather a large number of streptococci. An animal was injected intravenously with another strain of hemolytic streptococci, and when it was killed five days later a multiple arthritis of the suppurating type was found. A section of the synovial membrane taken from the neighborhood of the plica showed a thrombosed vessel containing round cells, with streptococci in the blood-vessel as well as in the surrounding tissue.

In another experiment, the first strain of organism, a hemolytic streptococcus, was transformed into a *Streptococcus viridans*. Instead of having the single coccoid forms in the chain, there was a tendency to chain formation, and a marked tendency to form in clumps. This hemolytic streptococcus was converted into *Streptococcus viridans* in the test-tube by simply placing it in symbiosis with the *Bacillus subtilis*. When it acquired this morphology, it acquired, when injected into an animal, features and the affinity for the heart-valve instead of the joint, producing now the same organisms repeatedly, and hemorrhage in the heart-valve and endocarditis, without producing arthritis.

A man had had an attack of articular rheumatism. He suddenly began to have severe muscular pain all over the body, with distinct localizations in various muscles, the intercostal muscles especially, the flat muscles of the skull, the occipitofrontalis, and the muscles of the shoulders. He had a beautiful lesion in the supinator longus and also in the biceps, in each instance within the tendon sheath. A cross-section of the biceps muscle showed the striation of relatively normal muscle with round-cell infiltration and hemorrhage, and a nodule somewhat larger than we find in the animal, but very typical. That is not only evidence of a real myocarditis, represented here in a man, but from this area the same organism reproduced myocarditis in a rabbit, and the organism was again isolated from that rabbit.

This affinity for these various structures is not merely accidental; it is certain. When the rabbit has acquired that affinity it is so marked that you can inject half a dozen animals with varying doses of bacteria and have a number of lesions produced in proportion to the size of the injection. Moreover, you can inject that same strain of organism and pass it through one animal, and in the next passage it will probably produce a few muscle lesions, or none at all, and after the second and subsequent passages you can do what you will, but you cannot produce a muscular lesion. The facts are that at certain stages of morphology, chemistry, or what not, these affinities for localization are absolute and very distinct.

We have discussed the marked and really characteristic affinity of hemolytic streptococci for joints—the evidence in man. The evidence, experimentally, is complete. We have shown that the organisms isolated as *Streptococcus viridans* have a marked affinity for the heart-valves, producing clinically that form of endocarditis that is so fatal, the chronic septic endocarditis, and a fatal endocarditis in rabbits. We have shown that the *Streptococcus rheumaticus* has the same affinity, but in no instance producing the lesions so badly as in the others.

These organisms have an affinity for other structures of the body—the mucous membrane of the stomach of a dog, which shows a large area of necrosis forty-eight hours after an intravenous injection of streptococci; the mucous membrane of a rabbit's stomach showed a beginning ulceration forty-eight hours after injection.[1]

Experimentally, the ulcers which I have produced by the intravenous injection of these organisms resemble more the type of ulcer seen in man than has been noted by other observers. The possibility of ulcer of the stomach in man being infectious, and the evidence that ulceration in the duodenum or stomach may have its origin as an infection, surely is suggested by results of this kind. I have made cultures from ulcers in man, and in two of those ulcers I was able to isolate streptococci, not from the surface, but from the depths of the ulcer. In one of these the affinity for the mucous membrane of the stomach in dogs was more marked than any other, producing a most beautiful ulceration in the stomach, and a slight, low-grade enteritis, and that was all the dog had. In the animals in which these organisms produced ulceration of the stomach the most common associated lesion was a cholecystitis, and beginning gall-stone formation. When the organism of rheumatism is injected, it is common to obtain marked ulceration and inflammation of the appendix in addition to the joint lesion. The organism from articular rheumatism has never produced ulceration of the mucous membrane of the stomach until it has been passed through a number of animals.

Owing to the cooperation of Drs. Mayo, Bevan and Ochsner I have been able, in conjunction with Dr. Sanford, to study the bacterial flora of four chronic duodenal and gastric ulcers, together with the regional lymph-glands in one. The number of colonies of organisms were very few, staphylococci being the predominant organism. In two cases, however, we obtained streptococci and one of these showed an affinity for the stomach mucous membrane of rabbits and dogs which was very striking. These results are very suggestive of the work which may be accomplished if surgeons will cooperate to furnish clinical material for study of this nature.

The affinity for the stomach mucous membrane is great; the affinity for the mucous membrane of the gall-bladder is also great. The production of inflammation of the gall-bladder is not always, I am absolutely sure, an expression of the bile, secondarily infecting the gall-bladder, but it is an inflammatory process just as in the heart-valve and in the joint, proving absolutely that the mode of origin in some instances, in which the conditions were ripe, was embolic, and that the bile was infected secondarily from the nodular inflammation in the mucous membrane and the ulceration.

One of the lesions that is most common about this grade of virulence, although a little higher virulence is more favorable, is the picture of an ascending pyelonephritis. I shall never have any trouble in the future, after seeing the results of these experiments, in explaining where the infection comes from in a patient with gall-stones who has not the history of typhoid, and I shall no longer have any trouble in satisfying myself where the infection comes from that forms the nucleus of a mural renal stone. I feel that the question of ulcer of the stomach and duodenum is entirely within control by proper methods, and that surgeons must come to our aid.

Clinical Aspects and Medical Management of Arthritis Deformans

DR. FRANK BILLINGS: The beginning of this work on joints started with an investigation of chronic infectious endocarditis, when the *Streptococcus viridans* was discovered in the circulating blood of patients suffering from this disease; but with such a worker as Dr. Rosenow that organism soon was chased down to a pneumococcus, and the report which I made at Atlantic City about seven years ago followed. These cases were reported as pneumococcus endocarditis, which was disputed by Eastern men and others, who said that we had made a mistake; but subsequent reports and Dr. Rosenow's report to-night prove that the work done in those days by him, that of the transmutation of *Streptococcus viridans* into the pneumococcus, was correct. Following that came the work on the joints, and we have gained a knowledge of arthritis deformans that we have not had before.

Chronic arthritis with deformity is, in my opinion, primarily of infectious origin. Usually the infectious micro-organism is a streptococcus. The work of Rosenow shows that the cultural and pathologic characteristics of the streptococcus may be changed by varying the culture-medium and by serial animal inoculation. The occurrence of chronic infectious endocarditis due to the *Streptococcus viridans*, the acute arthritis rheumatica of chronic arthritis due to a streptococcus, of myocarditis, acute and chronic, due to still another strain of the streptococcus modified from strains of other streptococci by varying the culture methods, seems to show that the mutation of these strains may occur in the animal or man at the point of focal infection. It is an important principle, not yet absolutely proved, that an organism can be transformed in cultural characteristics and pathogenic quality in the test-tube and by passage through animals, and is suggestive that the same organism in man, focally situated, may change and produce various lesions, in one endocarditis, in another acute arthritis, in another myocarditis, with or without chronic arthritis of a deforming type.

Confusion has arisen from the attempt to classify deforming joint disease anatomically. In the same patient one may find varying anatomic changes, these depending on the source of the blood circulation of the joint, in part, and apparently, also, on the resistance of the tissues to the infectious agent, and, finally, to the degree of virulence of the micro-organism infecting the tissues of the joint. The circulation to the joint structures consists of three separate systems: that to the periarticular structures, that to the synovial membrane and its reduplication, and that to the medulla of the bone in the shaft. This explains the variety of anatomic changes which occur in any form of chronic arthritis. If you will examine these patients carefully, you will sometimes find all types in one individual, but not in all. Practically all patients with deforming arthritis suffer from chronic myocarditis with interstitial overgrowth, and consequently contraction. Heretofore this muscular contraction has been thought to be due to nervous influence, or a secondary event in chronic arthritis, due chiefly to the posture of the limbs involuntarily assumed to relieve the pain in the joints. This is true in some instances, or in part in all possibly, but in arthritis deformans the shortening occurs in muscles when near-by joints are not involved. Culture yields in many instances micro-organisms of a streptococcoid type. It is our opinion that these are the cause of myositis and will probably prove to be mutation forms of the streptococcus organism found in the tissues and nodes of arthritis deformans.

In addition to the primary infectious origin of the invasion of joints and muscles in arthritis deformans, there is unquestionably an associated, probably secondary, change in metabolism which intensifies the anatomic joint changes, and is further manifested by a general nervous irritability, frequently a secondary anemia, loss of weight, disturbed digestion, etc. In part, the poor general nutrition is due to the protracted illness, with deprivation of proteins, and lessening of the general strength by hot baths, and by too much irrational drugging. In addition, there are metabolic changes in bones, cartilage and ligaments, and in the muscle tendons, which we do not understand. The best example is the poker-spine of a spondylitis deformans, which has been compared with the melted tallow which flows down and hardens on the candle. Possibly, future study may explain this, and also that these metabolic processes are set up as a reaction to the bacterial toxins.

Therefore, I would consider arthritis deformans as a clinical entity based on the established proposition of the existence of a chronic focus of infection due to a streptococcus which is usually located in the faucial tonsil or in the antra of the head, or in the jaw, related to the alveolar processes, or more rarely the gall-bladder, appendix, prostate or elsewhere. The

1. See article this issue, p. 1948.

V. 61
1913

streptococcus is isolated from the infectious focus and is susceptible of mutation in cultural characteristics and pathologic effects. Finally, there is an associated chronic myocarditis, apparently due to a type of streptococcus that has no affinity for the muscles. I think that this clinical entity due to the streptococcus may be differentiated from other infections of chronic arthritis, if one keeps in mind the characteristics which I have mentioned.

Gonorrheal arthritis and especially spondylitis due to the gonococcus may be difficult to separate from arthritis deformans; but the gonococcal focus may be located in the urinary tract, the prostate or more frequently in the seminal vesicles, and thus settle the question. I have never seen the Neisserian organism cause a myositis.

The first step in the treatment is a thorough investigation of each patient. An attempt must be made to find the focal cause. While I believe that the faucial tonsil is more frequently the seat of focal infection than any other point in the body, still a thorough examination must be made of the sinuses, the teeth, the jaw and the pelvic organs as to the possible presence of a chronic focus of infection in the gall-bladder or appendix, and in the event of gastro-intestinal diseases, associated especially with stasis of the intestinal contents, a study of the feces as to the intestinal flora should be made. If the patient has suffered from frequent attacks of tonsillitis, if the tonsils show infected crypts, even though they be small, they should be removed. A large fibrous tonsil rarely causes the trouble. It is the small tonsil, usually, that contains the infectious organism in an obstructed crypt or an abscess cavity. My point is not to limit the investigation to the tonsil, but to search for the possible focus of infection elsewhere. If none is found elsewhere, it is my opinion that the tonsils should be removed, even though the history is negative to attacks of tonsil disease.

The aid of the orthopedic and general surgeon is frequently necessary to correct deformities due to contracted muscles, and in the application of proper temporary braces, etc. The surgeons have even restored dislocated joints for us and stretched the contracted muscles by putting on splints. The hygienic management does more than any other one thing to improve the patient.

Finally, immunity is still further established by the judicious use of autogenous vaccines, repeated every five or six days, in doses varying from 50 to 200 million. We used to employ larger doses, but experience showed quite as good results from the use of smaller doses without some of the disadvantages of excessively large doses. I have yet to see one patient who suffered from arthritis deformans improve under treatment with stock vaccines. This is probably due to the fact that the source of the infection has not been searched for and removed.

Arthritis deformans is an infectious entity. There is a varying degree of joint involvement, sometimes proliferative or hypertrophic, sometimes degenerative or atrophic. In practically all patients there is a chronic myositis, sometimes quite generalized. Practically always there is a general debility, a malnutrition, and probably a secondary faulty metabolism. The focal infection which may give rise to arthritis deformans is usually located in the head, but may be located elsewhere in the body.

The treatment and management must comprise: (1) the removal of the cause; (2) improvement of the general condition of the patient and resistance to the infectious organism by a personal hygiene, including good food, pure air, rational calisthenics and graduated exercises, with cheerful environment, and (3) the use of autogenous vaccines. The treatment of such cases should be carried on in a hospital in which team-work of the staff may be used for the investigation and removal of the cause, and subsequent treatment, both medical and surgical, may be carried out.

Etiology of Biliary Tract Infections and Their Relations to Duodenal Ulcer and Appendicitis

DR. CHARLES L. MIX: The blood-supply of this region has something to do with the distribution of the lesions. The superior mesenteric artery is the supply of the appendix, and the region of the pylorus is supplied by the hepatic artery primarily, and that branch known as the superior pancreatico-duodenal. This one artery supplies both the gastric and the duodenal side of the pylorus. It supplies that part of the pylorus which hangs free in the gastrohepatic omentum, or, rather, fastened to it by the hepaticoduodenal ligament. This one artery supplies, therefore, that portion of the stomach which is the site of the ulcer, and it is not at all unlikely, in accordance with the embolic theory, that the emboli may enter on either side of the pyloric line, or in it. They may pass into the pyloric branch of the hepatic, but it is more likely, since the pathway of infection is more straight through the gastroduodenal, that they may pass straight down that pathway in somewhat the same manner as infection passes up, as a rule, to the left side of the brain from the arch of the aorta in cases of cerebral embolism.

The lymphatic supply of this region also merits attention. The appendix has coming from it two sets of lymph-vessels, or, one might say, three. There are in all of the mucous membrane structures two sets of main lymph-vessels. These have not been described until recently. One of these lymph-vessels, and a very important and somewhat disregarded one, is that which runs in the mucous membrane itself, and is so near the surface of the mucous membrane that it for a long time escaped attention. The next set is that which runs in the submucosa, and then outside of that, beneath the peritoneum, is another subserous set of lymph-vessels. These three sets are more or less distinct from one another. Coming from the appendix, therefore, is a set of currents which may ascend into the cecum, and then up the colon, in this mucous layer of lymph-vessels, or we may have the lymphatic current passing along the subserous surface, but along the colon, giving rise to certain cases of inflammation and extension of peritonitis, localized, sweeping up along the cecum toward the ascending colon, and producing numerous adhesions.

In the region of the duodenum, pylorus and stomach there is the same set of lymph-vessels. The mucous lymph-vessels are directly continuous through the pylorus, so that the gastric mucous lymph-vessels, the pyloric mucous lymph-vessels and the duodenal mucous lymph-vessels form one system. There is a similar system in the muscular and another in the subserous coats. These all make their way into nodes which pass up first along the gastroduodenal artery and then to the lymph-vessels, and from there to the transverse fissure of the liver, and the disturbance is apt to localize at the entrance of the portal vein, especially in cases of specific infection. There is one fundamental lymphatic law which can be adhered to, and that is that infection follows the lymph-vessels not into organs, but from organs toward other structures; also in all tubular structures, that is, in all ducts, in the body coming from glands this same law holds. You find them in the urethra and running to the bladder and the ureters to the kidney. Then, the lymphatic currents from the ductus choledochus run up to the hepatic duct and then to the liver, and those of the gall-bladder run through the cystic duct toward the common duct. Of course, it is possible that infection may be carried along this lymphatic system.

Every surgeon knows that these various regions are frequently related to one another. Often in operating for stomach or duodenal ulcer foci of infection are found in the appendix or gall-bladder, and frequently in the pancreas. Ochsner has reported that in 35 per cent. of his gall-bladder cases he has found an infected appendix. Kehr of Germany has removed the appendix in a large number of his gall-bladder cases.

As to the origin of duodenal and gastric ulcers, he believes that the theory of contact ulcer is very true. Contact ulcer is undoubtedly an embolic process. The work of Rosenow is rather conclusive as to the origin of these ulcers by the embolic process.

Up to about three years ago I was not a believer in the general statement made by many patients with duodenal ulcer that their attacks came on more particularly in the spring and fall. I have questioned many, and have found that duo-

denal ulcer is a disease more prevalent in the fall. Why is this so? The work of Rosenow is to some extent an answer. It is because of the possibility of a generalized infection in the body at certain periods of the year. Those due to the *Bacillus coli communis* probably will not be found to have any particular relation to any period of the year.

The same possibilities are present for infections of the biliary passages. There may be either a cholecystitis and a cholangeitis arising together, which is probably a frequent occurrence, much more so than we think, or the cholecystitis may follow the cholangeitis, or vice versa. The origin of these infections bacteriologically has been found to be due in the great majority of cases to two germs, *Bacillus coli communis* and *bacillus typhosus*. A Japanese observer has reported that 17.9 per cent. of his cases were due to other parasites instead of bacteria. The relation of gall-bladder disease to pregnancy I shall merely mention. It is probable than an element of biliary stasis in corset-wearing enters into consideration in these cases, because of the discrepancy of gall-bladder disease among Japanese women, 3 to 2 among men, and in Europe and America as 12 to 3 between women and men.

Another interesting point in connection with gall-bladder infection is incidence as regards advanced age. Old men are far more apt to have gall-bladder disease than the younger. At 70, the chances are even. That, of course, is due to the fact that the longer one lives the greater are the chances of acquiring some sort of infection.

The most common preliminary diseases which may lead up to trouble with the gall-bladder are: (1) typhoid fever; (2) influenza; (3) rheumatism, and then various forms of disturbance of the bowel, malaria, syphilis and peritonitis.

It is difficult to account for the spread of infection from the appendix to the gall-bladder; the portal blood is the only possible method, and it is only the chronic cases that produce this infection. There is one other possible source of infection, and that is a direct absorption of the blood-stream in the appendix, with consequent infection of the walls of the gall-bladder and liver directly. One point regarding the appendix: Chronic disease of the appendix does promote duodenal stasis, and with that you have an excellent chance for the development of a large number of germs; but the way of infection through the common duct and the liver I do not believe in at all. The simultaneous development of gall-bladder and appendix disease will probably take place, if it does take place, through the blood-stream. It cannot take place in any other manner. It is possible, but not probable, that infections of the gall-bladder take place by way of the portal tract. A great many men think that the infection is straight up the common duct. Dr. A. O. J. Kelly, in December, 1905, stated that infection does not, contrary to the opinion at that time, ascend directly from the duodenal and gastric area through the common duct into the liver, and there are good reasons for accepting this. Infection never takes place by bacteria going against the stream. If it cannot take place against the stream in the lymph-vessels, how can it take effect against the stream in cases of the ureter, or the common duct? It cannot do it.

Bond, of Leicester, England, has conducted a remarkable series of experiments which have been repeated and found to be true. He discovered that in vesical fistulas, indigo blue placed at the opening of the fistula below can be found afterward traveling up the urethra and appearing at the meatus. He said that it was not a capillary affair, because it did not appear in dead tissue, only in the living.

Surgery of These Lesions

DR. JOHN B. MURPHY: The experiments of Dr. Rosenow give us a new light, a clearing up of the connection between the primary infection manifestations and the secondary metastatic lesions. The surgeon's role in this class of case is necessarily small, but in 1902, when we first insisted that these arthritides were metastatic manifestations of infections in other positions in the body, it was considered very doubtful that that would be finally sustained; but we were positive, because there was such a clean-cut definite relationship in the cycle of metastases between the primary infection and the secondary manifestation in the way of an arthritic inflammation. When you see in a ward two, four, six, eight or ten of these cases with secondary joint manifestations, and in each case you can trace it back to practically the same position in the body, a chronic lesion of a definite type, you cannot fail to accept the primary lesion with the secondary lesion.

In the early fall we have our annual crop of spondylitides, each patient describing his attack in the same way, associated with types of infection of the same character, and giving fixation of the spine which looks as though the parts had been cemented together. The ossification which cements these bodies together is merely a continuation of the embryologic process of ossification in the joints of the long bones, and that deposit is taking place in the connective tissue. Finally, you have a solid, compact, bony mass, a complete ossification. All of that forced us to believe and insist that the primary lesion was an infectious one, and that the secondary lesion in the shaft was purely a metastatic manifestation of it. Then we asked ourselves, What rôle can the surgeon play? Dr. Billings has suggested to-night that the surgeon can restore the dislocated joints. That is not to be the rôle of the surgeon. We have insisted that the arthritides have a definite surgical local treatment. Furthermore, as the disease advances our limitations become more and more pronounced until there is nothing to do but the crude carpenter-work of reconstruction. But in the early stage of the disease there is a local treatment, a surgical treatment, and up to the time of the vaccine treatment it has been the only treatment that has availed anything.

What do you find on looking into these joints after an acute infective process has passed? Often just a local area of necrosis or ankylosis, no larger than a nickel. That is, in cases in which the manifestation is associated with an infection and the "rheumatism" is not initiated by a chill. When the "rheumatism" is initiated by a chill, which shows the virulence of the infection, whether due to a mutation of the diplococcus or to what we have no certain knowledge of, we have learned that an ankylosis in the whole of the joint is the rule, great enough to destroy, not the small area, but all that synovial membrane.

By means of experiments with the possible neutralization of the virulence of this material we are hoping to find some medicament which will destroy that, but until this is found let us take advantage of what we know in the way of stimulating phagocytosis. Thirty years ago Carlos by injections produced abscesses in different parts of the body which were known as concentrating abscesses. His clinical observation showed nothing at all about phagocytosis. He found that if, in an acute infection of the knee, in the hip or in some portion of the body a local abscess is produced, a rapid subsidence of the fever will result, and the patient will rapidly recover. What did that mean? It meant exactly what I can demonstrate any day, that injecting 20, 30, 40 or 50 minims of turpentine under the skin causes an abscess to form rapidly, and while it is forming there will be a great increase in general leukocytosis, and any infective process will be influenced by the formation of the abscess, which, you understand, is not a microbic, but a chemical abscess, which produces a constitutional leukocytosis.

What can we do in regard to the joints? Two things. We can stimulate the local resistance in the acute infections by producing an infiltration of the tissue within the joint. We can stimulate constitutional resistance by injecting into the joints something which causes not only a local increase in the polynuclears in the joint, but also a constitutional increase. During the inflammatory process the intra-articular pressure may be prevented by making extension. If we can do this, we shall stop the destruction in the joint or limit it to a very marked degree. We have demonstrated that again and again. Can we do this thing with the chronic varieties of infection? No. But we can do something with them. During the inflammatory process luxation must not be permitted to take place and deformity must not be permitted to occur. It is not necessary that deformities should occur. I

V. 61
1913

feel that the treatment of joints is a prophylactic one, and not a therapeutic one—the joints must not be permitted to deform in the beginning, and then we shall not need to operate later to correct deformities.

CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA

Fourth Annual Session, held in Chicago, Nov. 10-15, 1913

(Continued from page 1929)

Further Observations on Chronic Intestinal Stasis

SIR ARBUTHNOT LANE, London: One case taught me how a patient may lead an active and happy life with only a small portion of the jejunum left after operation. In this case I removed a large portion of the jejunum, after which the patient gained rapidly in weight and strength. Several patients have attempted suicide on account of chronic intestinal stasis, and in all such cases the removal of the large bowel has restored the sufferer, not only physically, but mentally. In 106 cases in which I have performed the short-circuiting operation for chronic intestinal stasis, there have been four deaths.

Relation of the Ductless Glands to the Work of the Surgeon

DR. ROSWELL PARK, Buffalo, N. Y.: The internal secretions, so often spoken of as hormones, exercise an apparently controlling influence on many of the organs and functions, not alone on the ordinary bodily functions, but also on the nutrition and regulation of individual organs and their particular activities, even to the extent of becoming responsible for the development of certain mental traits or personal characteristics which may make or mar the individual, and may thus affect both his physical and intellectual welfare.

The hypophysis is a persistent organ and, therefore, must have throughout life a continued function. Extracts of the whole gland increase blood-pressure, cause uterine contraction, increase peristalsis, lower carbohydrate assimilation, and have a mydriatic effect. Used to excess they cause emaciation, degeneration of the liver and increased metabolism. Extirpation produces in animals a peculiar cachexia, reduced pulse-rate and respiration, fibrillary tremors, and death from apathy and coma. The overgrowth of the pituitary sometimes occurring after typhoid is to be considered as the result of toxins which stimulate its growth, as well as perhaps that of the epiphyseal bony borders, thus accounting for excessive overgrowth after this fever. Something of the same kind is often seen after marriage, when the stimulation of the sex glands seems to extend in a short time to the hypophysis.

The thyroid was once regarded as a reservoir, by means of which blood-pressure in the brain was equalized. It seems to have an influence on the formation of the blood, slightly resembling the action of the spleen, possibly vicariating for it. Its most important task appears to be elaboration of iodothyrin. Certainly iodin is its most important constituent, and in this the thyroid is richer than any other organ.

The parathyroids have only within late years been given their proper consideration. It is generally believed that nearly all cases of tetany in man are of thyroidal origin, and due to defective function and consequent evidences of hypoparathyroidism. The thymus seems to have much to do with the development of the entire bony system; when its activity is reduced ossification is much interfered with, and sometimes it fails utterly.

A Summing-Up of the Goiter Question

DR. CHARLES H. MAYO, Rochester, Minn.: Various enlargements of the thyroid are the result of temporary excessive physiologic demands, as at puberty, pregnancy, infection, menstruation, etc. Many goiters of the simple and mild exophthalmic type undoubtedly recover spontaneously and, in many instances, various forms of medical treatment may hasten the recovery and restoration of the gland to an apparently normal condition. Simple goiters of long standing are often thrown into degeneration by giving iodin, causing thyrotoxicosis but not exophthalmos, although some symptoms are the same in these two forms of toxic goiter. Encapsulated adenomas and simple colloid goiters which have resisted treatment are in most instances best treated by removal of enough of the gland to remove the disease. In simple goiter the more enlarged lobe should be extirpated; encapsulated adenomas should be enucleated and thyroids which are bilaterally enlarged should have double partial resections with division of the isthmus. Exophthalmic goiter is essentially a disease chronic in character, presenting exacerbations and ameliorations of symptoms extending through a period of months or several years. While this disease is amenable to surgical treatment by the removal of a large part of the hypersecreting gland, this procedure should by no means be considered emergency surgery, and during exacerbations all cases should be considered medical. Surgery is indicated during the upward wave of improvement. Extreme conditions, especially dilatation of the heart, may require preparation medically before instituting operative interference, and this should be confined to a preliminary ligation of the left upper pole. Should reaction follow this, ligation of the right upper pole is indicated a week later and thyroidectomy reserved until the patient has gained in weight and general health. Otherwise thyroidectomy is made at a second operation.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

November, CXLVI, No. 5, pp. 625-789

1 Clinical Features of Cases of Subacute Bacterial Endocarditis That Have Spontaneously Become Bacteria-Free. E. Libman, New York.
2 Noguchi Luetin Reaction in Syphilis. G. B. Foster, U. S. Army.
3 *Dorsal Percussion in Enlargements of Tracheobronchial Lymph-Nodes. J. C. Da Costa, Philadelphia
4 Transmissibility of Lepra Bacillus by Bedbug (Cimex Lectularius L.). A. J. Smith, K. M. Lynch and D. Rivas, Philadelphia.
5 Syringomyelia: With Autopsy Findings in Two Cases. O. Klotz, Pittsburgh.
6 Modern Genito-Urinary Diagnosis and Treatment, with Reference to Laboratory Methods. R. A. Thomas, Philadelphia.
7 *Orthodiagraphic Study of Case of Bronchial Asthma. L. F. Warren, Brooklyn.
8 Hereditary Degeneration (Pseudohypertrophic Muscular Dystrophy in Combination with Degeneration in Central Nervous System). C. D. Camp, Ann Arbor, Mich.
9 *Two Instances of Chronic Family Jaundice. A. H. Hopkins, Philadelphia.
10 Clinical and Metabolic Studies of Case of Hypopituitarism due to Cyst of Hypophysis with Infantilism of Lorain Type (So-Called Typus Frœhlich or Adiposo-Genital Dystrophy of Bartels). D. Stetten, New York, and J. Rosenbloom, Pittsburgh.
11 Diagnosis of Gastric Ulcer. J. R. Verbrycke, Washington, D. C.

3. Dorsal Percussion in Enlarged Tracheobronchial Lymph-Nodes.—The eighteen case histories taken as the basis of Da Costa's report were selected from a series of thirty-eight mediastinal cases which afforded definite vertebral percussion findings. They represent, he says, typical examples of these signs, depending wholly on the adenopathies in question and not on the limited pleuropulmonary lesions coexisting in a few instances. No case of enlarged bronchial lymph-nodes associated with some other large mediastinal mass (i. e., carcinoma, fibroma, gumma) has been included in the summary, in order to rule out, so far as possible, extensive neoplastic tumors as potential factors of the spinal changes noted.

The individual vertebral physical signs of the eighteen tracheobronchial cases are summarized and charted according to the following groups: 1. Interscapular dulness, above the level of the inferior scapular angles, or over the first seven thoracic spinous processes. 2. Intrascapular dulness, below the level of the inferior scapular angles, or over one or more of the five lower spinous tips. 3. General thoracic hyperresonance

over the entire thoracic segment. 4. Normal percussion signs over the entire thoracic segment. In simple enlargement of the tracheobronchial lymph-nodes percussion of the thoracic vertebrae, especially above the level of the inferior scapular angles, usually affords tonal changes of real clinical value if properly interpreted. These changes, more often corroborative than primarily diagnostic, invariably should be correlated with the mural signs of the individual case.

Hyporesonance with maximum tactile resistance and hyperresonance with minimum tactile resistance, Da Costa claims, may have precisely the same significance in uncomplicated adenopathies. To explain this seeming paradox it is to be assumed that in the former instance the mass exerts a dulling pressure, and that in the latter it conducts the predominant tracheal tone. In nodular enlargements associated with pleuropulmonary lesions, emphysema and pleural adhesions are to be reckoned with as additional factors of hyperresonance and hyporesonance, respectively. In comparison with other (neoplastic) mediastinal masses, tracheobronchial tumors affect the vertebral percussion sound to a minor degree and more often produce dulness than hyperresonance. This general rule has a restricted clinical bearing in differentiating adenoid and malignant tumors. In routine examinations, Da Costa prefers ordinary mediate finger percussion to instrumental pleximeter percussion in studying vertebral changes of sound. The latter method, he says, gives no surer clue to tonal changes than that afforded by percussion with the bare fingers, and its practice obviously forbids all judgment of tactile resistance.

7. **Bronchial Asthma.**—In a patient with severe and repeated attacks of asthma seen by Warren, the pulmonary distention continued for several weeks after a cessation of a prolonged attack. This distention caused the heart to assume a vertical position, but did not influence its surface area. During the attack of asthma the diaphragm moved but slightly, and movements in reverse of the normal were observed. In explaining such reversed movements, however, one must take into account the excessive thoracic movements which act on the diaphragmatic attachments. The movements of these attachments may more than neutralize the movements due to the diaphragmatic contractions, so that the crests of the diaphragm may seem to execute reversed movements.

9. **Chronic Family Jaundice.**—A summary of Hopkins' cases is as follows: The jaundice was in every instance chronic, non-obstructive, and familial in type. In the first family, four members of which had had attacks of varying severity, it extended over three generations, and the attacks were more frequent and more severe in youth. The spleen was enlarged in each attack, at which times there was a moderate degree of anemia. Throughout the course of one case which Hopkins was able to follow more closely than any of the others, the fragility of the red blood-cells ran *pari passu* with the "bilious attacks" and the increase in intensity of jaundice. A second case did not show any increase in fragility, nor did the fourth case, both of which had been free of attacks for some time. The third case showed a lessened resistance of red cells up to 0.54 per cent. NaCl. The second family presented interesting features, in that three generations were involved and no less than five children in one immediate family were subject to the condition at that time. Owing to the fact that most of the family were living in Canada and New England, Hopkins has been unable so far to carry out further studies on the individual cases. In one point Hopkins' findings do not confirm those of Tileston and Griffin, as he has found in the serum of three members of this group isohemolysins to be present in ten out of a series of nineteen experiments.

Archives of Internal Medicine, Chicago

November, XII, No. 5, pp. 585-612

12 Cause of Specific Dynamic Action of Protein. G. Lusk, New York.
13 *Sources of Error in Use of Stomach-Tube for Diagnosis. T. W. Harmer and W. J. Dodd, Boston.
14 *Thrombosis. L. Aschoff, Freiburg, Germany.
15 *Blood-Pressure in States of Excitement and Depression. M. C. Hawley, Watertown, Ill.
16 *Age Incidence in Carcinoma. C. V. Weller, Ann Arbor, Mich.
17 *Heredity with Reference to Cancer. A. S. Warthin, Ann Arbor, Mich.
18 Clinical Study of Vagotonia. A. H. Hopkins, Philadelphia.
19 Experiences with Prophylactic Typhoid Vaccination: Its Effect on Menstruation. A. R. Lamb, New York.
20 *Hexamethylenamin: Liberation of Formaldehyd and Antiseptic Efficiency under Different Chemical and Biologic Conditions. P. J. Hanzlik and R. J. Collins, Cleveland.

13. **Stomach-Tube for Diagnosis.**—The unaided stomach-tube occasionally fails to detect gastric stasis which is demonstrable with the bismuth meal and Roentgen ray. Curious to determine the cause of this inefficiency of the stomach-tube, Harmer and Dodd were led to watch by means of the fluoroscope, the course taken by the tube. They observed in several individuals that the end of the tube did not pass directly to the most dependent portion of the stomach. In these cases, the tip of the tube first touched a portion of the stomach wall well above the most dependent portion. As more tube was passed, the end of the tube slid along the wall of the stomach a greater or lesser distance and became impinged against the stomach wall. On further passage of the tube, the end remained fixed and a downward bowing of the tube into the lower portion of the stomach occurred. This downward bowing of the tube apparently diverted the direction of force on the tip of the tube; for, as more tube was passed and the dependent loop of tube increased in size, the tip sooner or later slipped from its fixed position. The force on the tip was then upward through the dependent loop of tube and consequently the tip slipped upward toward the cardia; that is, it became further removed from any residuum which may have been present in the stomach. On passing still more tube, the end may follow about the wall of the stomach and may eventually reach its most dependent portion. They also observed, however, that it may again curve horizontally and then upward. The tip of the tube may skim the surface of the residuum and therefore drain only a portion of it. Further passage of the tube in the hope of reaching a deeper level of the contents may fail, because the tip may curve upward. The result in such cases may not be seriously deceptive. The degree of stasis may be underestimated, but the analysis of the siphoned contents may show stasis. In some instances, however, considerable amounts of residuum may entirely escape detection by the tube.

14. **Thrombosis.**—Different poisons, whether hemolytic in action or not, Aschoff maintains, bring about distinctive forms of capillary thrombosis, among which can be differentiated the following types: Blood-Platelet Thrombosis: This arises by intravenous injection of a homologous serum, of solutions of hemoglobin and stromata from homologous blood, of heterologous serums, ether, glycerin, distilled water, India ink, collargol and olive oil. The thrombi arise in the capillaries of lungs, liver and spleen. Thrombosis from Blood-Stromata: This occurs in pure form only, when very marked hemolysis occurs in the blood-stream as a result of the action of hemolytic agents. Otherwise it occurs only in conjunction with blood-platelet thrombosis. Thrombosis from Fragments of the Blood Elements (*Blutträmmerthrombose*): Disintegration of the elements of the blood occurs by introduction of ricin, bacterial toxins, etc., which destroy the leukocytes, lymphocytes, macrophages of the spleen, liver and bone-marrow. The fragments, in conjunction with scanty fragments of erythrocytes, roll themselves together to form thrombi in the spleen and liver. Fibrin is then subsequently deposited there. Leukocytic Thrombosis: The polymorphic and mononuclear leukocytes phagocyte the foreign elements introduced into the blood-stream, and are stopped and held back in the capillaries of the internal organs, especially the lungs, spleen and liver, so that a leukopenia results in the peripheal circulation. This process is especially brought out by bacteria, but also by various indifferent foreign substances like particles of ink and starch. Fibrin Thrombosis: Although by injecting stromata or foreign serums the coagulability of the blood can be increased, no deposit of fibrin occurs. Deposit of fibrin occurs only secondarily, as a sequel of the types of thrombosis already described.

Aschoff claims that neither endothelial damage, on which so much stress was previously laid, nor a direct coagulation of the blood, play any rôle. Only two reasons for the throm-

V. 61
1913

bosis require to be considered, and their merits weighed one against the other; they are, the changes in the blood elements themselves, and the slowing of the blood-stream. Neither of these two factors can be excluded, as even in the experiments where thrombi of different sorts are produced by heightening the agglutinability of the blood-platelets by the disintegration of white or red corpuscles, these thrombi can occur only where normally a marked slowing of the blood-stream is present; for example, in the capillaries of the lungs, liver and spleen. But even by very marked destruction of the blood elements it is impossible to produce thrombi by deposition in the larger veins when no slowing of the current occurs. An additional factor, therefore, needs to be considered, especially in cases in which the thrombi are localized in the large veins, and where the above-mentioned capillary regions of the lungs, liver and spleen generally implicated in toxic thrombosis remain free. In such a case the increased agglutinability of the blood-platelets cannot be the direct exciting cause, but a definite and recognizable slowing of the blood-stream must first of all occur.

The slowing of the blood-stream and the alteration of the blood elements themselves, especially alterations of the platelets, are the chief factors in the production, not only of the static, but of toxic thrombosis. In static and similar types of thrombi the slowing of the blood-stream is of prime importance, while for the toxic varieties the changes in the blood elements have the dominating influence.

15. **Blood-Pressure in States of Excitement and Depression.**—Hawley found that cases of mania show typical features in the tracings which are taken, and these are probably due to an altered state of vasomotor tonicity in keeping with the other motor phenomena in these cases. These features are large amplitude of the curve, rapid action and short interval between beginning of the oscillation and full amplitude. The blood and pulse-pressures are raised and are more marked, as are the other features just spoken of, as the restlessness becomes more marked. All decrease as the patients recover. In non-productive cases these features are much diminished, but still demonstrable. Arteriosclerosis existing in maniacs raises the blood- and pulse-pressure still higher. The usual features of the maniac tracing are as apparent here as in cases without arteriosclerosis, and the larger amplitude, rapid action and early onset in the tracing are not features of the sclerosis, but of the maniac state. In cases of sclerosis occurring in other types of psychosis these features are lacking.

In stuporous cases the blood- and pulse-pressure are quite low. The amplitude is quite small and action is slow and tedious. This seems to indicate a condition of relaxation of the blood-vessels, in keeping with the other phenomena exhibited. In depressed cases the blood- and pulse-pressures are lower than in the maniac states, but higher than in the stuporous states. The amplitude of the wave, its onset and rapidity is less than in the manic states, but higher than in the stuporous states. Any rise in any of these things is due either to muscular resistance or physical disease and not to any state of mind.

In melancholia the average blood-pressure is relatively high, for the patients are among those in middle life. The blood-pressure and pulse-pressure are near normal as long as there is no muscular resistance, and no other factor, such as arteriosclerosis, to produce a rise. The tracings show nothing peculiar, except when these factors are added, and then blood-pressure is raised; the amplitude of the wave is also slightly increased. By taking many readings it may be possible to attribute high blood- and pulse-pressures in some cases to the varying effect of arterial and kidney disease on peripheral resistance rather than to the effect of the mental condition. In other cases resistance on the part of the patient is a factor in raising the pressure—a fact which might be overlooked had only one reading been taken at such a time.

16. **Age Incidence in Carcinoma.**—An analysis of over 1,100 microscopically verified cases of carcinoma by Weller showed that the incidence of carcinoma is greatest at the age period of 58 to 62. After this period the carcinoma incidence decreases. Carcinoma incidence in women runs a definite cycle which is roughly parallel to that in men, but precedes it by five to ten years. The earlier age for the phases of the curve for women is largely due to the earlier appearance of carcinoma of the breast and uterus as compared to other varieties of carcinoma.

17. **Heredity and Carcinoma.**—During eighteen years, 3,600 cases of neoplasm of all varieties were studied by Warthin either in material taken for practical diagnosis or obtained by necropsy. Of these 3,600 cases, some 1,600 were cases of carcinoma, as was shown by the microscopic diagnosis. About one thousand of these gave fairly good family histories with the ages of the members. A smaller number (30 per cent.) gave detailed histories. From this number are taken the families which show multiple occurrence of carcinoma. In many of these all of the members of the family for three generations are given; in others, the records are incomplete. Four families give complete records of the descendants of the cancerous grandparent. The incidence of cancer in these families is so striking that it can be interpreted as showing an inherited susceptibility to cancer.

Warthin believes that a marked susceptibility to carcinoma exists in the case of certain family generations and family groups. This susceptibility is frequently associated with a marked susceptibility to tuberculosis, and also with reduced fertility. The multiple occurrence of carcinoma in a family generation practically always means its occurrence in a preceding generation. The family tendency is usually more marked when carcinoma occurs in both maternal and paternal lines. Family susceptibility to carcinoma is shown particularly in the case of carcinoma of the mouth, lip, breast, stomach, intestines and uterus. In a family showing the occurrence of carcinoma in several generations there is a decided tendency for the neoplasm to develop at an earlier age in the members of the youngest generations. In this case the neoplasm often shows an increased malignancy. Because of the difficulty of obtaining complete family records, Warthin says, the laws of inheritance of carcinoma susceptibility cannot be determined accurately, and it is highly desirable that investigations of large family records should be made relative to the occurrence of carcinoma susceptibility. In Levin's study of cancerous fraternities in connection with the whole family history the percentage of cancerous members in each cancerous fraternity corresponds very closely to the Mendelian percentage of members with recessive unit-characters in a hybrid generation. The same conclusion might be drawn from Warthin's cases in certain instances, but it does not seem to him that the data are sufficient for such conclusions. He himself does not consider this conclusion as final. Levin also concludes that resistance to cancer is a dominant character whose absence creates a susceptibility to cancer. While some of Warthin's cases show a family history suggesting this, others would indicate a progressive degenerative inheritance—the running out of a family line through the gradual development of an inferior stock, particularly as far as resistance to tuberculosis and cancer is concerned.

20. **Hexamethylenamin.**—The authors summarize the results of their work as follows:

1. The phloroglucin test is the most delicate and most useful test for free formaldehyd.
2. Alkalies prevent, while acids facilitate the liberation of formaldehyd from hexamethylenamin in all body fluids.
3. The liberation of formaldehyd from hexamethylenamin in pathological fluids obeys the same laws as in other solutions; that is, it can only occur in acid reaction. Even when 0.5 per cent. hexamethylenamin was added to them, not enough formaldehyd was liberated to be bactericidal.
4. Hexamethylenamin itself is not bactericidal.
5. Liberation of formaldehyd from hexamethylenamin depends on the excess hydrogen ion concentration of the solution above the neutral point.
6. Previous investigations leave us in doubt as to the behavior of hexamethylenamin in the body.
7. After administration, hexamethylenamin is present, but does not liberate free formaldehyd in blood, cerebrospinal, pleural, pericardial and synovial fluids, vitreous and aqueous humors, and urine when truly alkaline. Formaldehyd is liberated in urine which is truly acid, and in the acid gastric contents.
8. Administration of monosodium phosphate with hexamethylenamin renders the urine acid and facilitates the liberation of formaldehyd.

9. The administration of alkali with hexamethylenamin renders the urine alkaline and inhibits the liberation of formaldehyd.

10. The beneficial therapeutic effects of hexamethylenamin depend on the liberated formaldehyd. Such effects are to be expected principally, if not always, in acid urine only. It is irrational to prescribe alkalies (bicarbonate and citrate) together with hexamethylenamin.

Boston Medical and Surgical Journal

November 13, CLXIX, No. 20, pp. 701-740

21 Nutrition of Anemic and Tuberculous Children. E. A. Locke, Boston.
22 *Carcinoma of Rectum. D. F. Jones, Boston.
23 *Artificial Pneumothorax in Treatment of Chronic Infection of Pleura and Lungs. C. Floyd, Boston.
24 Better Training of Nurses in Insane Hospitals. W. Channing, Brookline, Mass.
25 Case of Orthostatic Albuminuria Treated by Exercise. H. J. FitzSimmons, Boston.

22. **Cancer of Rectum.**—The operation of choice in cancer of the rectum in Jones' opinion is an abdominosacral, rather than an abdominoperineal operation. He has determined on a two-stage operation in a few of the cases. This consists in:

First Stage.—The inferior mesenteric is tied just below its junction with the aorta. The mesentery of the sigmoid is separated from the posterior wall, the ureters identified, and the rectum, with all the pelvic fat, is separated in one mass down to the tip of the coccyx posteriorly, while anteriorly it is separated from the bladder, or vagina. After separating the bowel in this manner, it is held forward and the peritoneal flaps brought together behind it. Instead of dropping the sigmoid back into the abdominal cavity, the upper portion is brought out through a rectus incision, and a Lilienthal colostomy done, great care being used not to injure the vascular arches in the mesentery. After twenty-four hours, the colostomy is opened and the distal portion cleansed by frequent washing, both from below and above.

Second Stage.—After five to seven days, the sacral portion of the operation is carried out as in the single stage operation. The sigmoid is cut off as high as possible in the pelvis, and the proximal end inverted and left as an appendage to the colostomy. Jones has carried out this two-stage operation with excellent immediate results in two cases. If the carcinoma is sufficiently high to make a resection and suture desirable, or if it is desired to bring the end of the sigmoid down through the sphincter, the inferior mesenteric should be tied in the usual way, and the whole sigmoid and rectum freed from the posterior wall and pelvis, as in a single stage operation.

The peritoneal flaps, which have been turned back, are then sutured together close about the freed rectum, and the abdomen closed. In from four to seven days, the posterior operation is carried out, the growth and a sufficient length of rectum above and below the growth is excised with the whole inferior mesenteric artery, and the fat surrounding it. An end-to-end suture is then done or the end of the sigmoid is brought through the sphincter. Jones is convinced that spinal anesthesia is essential in the combined abdominosacral operation, if the mortality is to be kept down.

23. **Artificial Pneumothorax in Chronic Infection of Pleura and Lungs.**—After some experience with the method of artificial pneumothorax in the treatment of pulmonary pneumothorax, Floyd is struck with the relatively small number of those afflicted that are really suitable cases for this treatment. Well marked or advanced strictly unilateral cases are not especially common even in large clinics for pulmonary tuberculosis, and some observers believe that such cases are always bilateral. If this type of case is strictly adhered to, Floyd says, the results obtained where the method is carried out conscientiously will be uniformly good, and the percentage of patients markedly improved or even arrested will be as large as 40 per cent. or 50 per cent. If, on the other hand, as is the tendency with most men, almost any otherwise hopeless case in which satisfactory compression can be obtained, is given a chance of obtaining relief at least from persistent symptoms, the results will not be brilliant, and Floyd believes not more than 5 or 10 per cent. possibly of such cases will be arrested. Artificial pneumothorax, he believes, will be of real aid in the chronically recurring tubercular pleural effusion, and in some cases of bronchiectasis and pulmonary abscess in which the inflammatory conditions to be met are not too extensive. But even if this group of diseases may be benefited by the use of this method, its field in the treatment of diseases of the chest will still be relatively a narrow one. It is most applicable where the patient is under the supervision of hospital or sanatorium management, and has failed to do well with the older and well established methods.

Canadian Medical Association Journal, Toronto

October, III, No. 10, pp. 835-930

26 *Series of Abdominal Cesarean Sections. F. Fenton, Toronto.
27 *New and Rational Method for Study of Functional Diseases of Nervous System. G. W. Howland, Toronto.
28 Treatment of Tubercular Spondylitis or Pott's Disease. W. G. Turner, Montreal.
29 Running Suture and Bloodless Operation. F. N. G. Starr, Toronto.
30 *Clinical Aspects of Regeneration of Bone, as Manifested by Study of Union of Fractures. E. S. Ryerson, Toronto.
31 Epidemic of Jaundice. M. Mackay, Sherbrooke, Que.

26. **Series of Abdominal Cesarean Sections.**—Of the twenty-six operations performed by Fenton, sixteen were done because of obstruction to delivery owing to contractions in the bony pelvis; six were done on account of antepartum hemorrhage with undilated os; and one each for eclampsia at term, large baby, and stenosis of soft tissues; one case is unclassified owing to loss of history. Five cases were second operations on the same patient and two patients have subsequently delivered themselves unaided. All of the children were delivered alive and all but three left the hospital in good condition. The three died during the first two or three days from prematurity. One mother died, but it might fairly be claimed that her death was not due to operation. All of the cases might be classed as primary operations in that they were either done before the membranes had ruptured or before any attempts had been made *per vaginam* at delivery, or more than one or two vaginal examinations made and those under the strictest precautions.

27. **Functional Diseases of Nervous System.**—Howland pleads that the terms neurasthenia and hysteria should not be used as diagnostic conclusions but should be entirely omitted, and that the general functional disturbances of the nervous system should be classified according to cause.

30. **Regeneration of Bone.**—Ryerson's argument is this: If the periosteum were osteogenetic, then new bone would be produced beneath it over the area where it is stripped up from the bone and the osteoperiosteal angle would be one of the first parts to be filled up. That this is not the case, he claims, is manifested by his plates which show that the osteoperiosteal angle is actually the last part of the space to be filled with a shadow, indicating new bone formation. From this, therefore, his inference is that the periosteum is not osteogenetic in character.

Georgia Medical Association Journal, Augusta

November, III, No. 7, pp. 215-256

32 Problem of Social Evil Considered in Its Social and Medical Aspects and in Relation to Problem of Race Betterment. J. E. Mears, Philadelphia.
33 *Chronic Nephritis Dietetics and Treatment. R. F. Wheat, Amsterdam, Ga.
34 *Prolonged Rest and Simple Diet in Treatment of Bright's Disease. H. F. Harris, Atlanta.
35 *Intestinal Hemorrhage in Typhoid. T. D. Coleman, Augusta.
36 Postoperative Ileus, with Report of Cases. W. L. Cooke, Columbus.
37 Eclampsia. H. W. Birdsong, Ashland.

33, 34 and 35. Abstracted in THE JOURNAL, May 31, pp. 1732 and 1733.

Illinois Medical Journal, Chicago

November, XXIV, No. 5, pp. 261-320

38 Auricular Fibrillation. F. Tice, Chicago.
39 Failures and Successes in Diagnosis and Surgical Intervention of Some Intracranial Diseases. J. C. Beck, Chicago.
40 Electrically Propelled Rotary Chain-Saw and Automatic Trephine with Accessory Instruments. E. J. Hoglund, Chicago.
41 Roentgenoscopy of Gastro-Intestinal Motility. C. A. Elliott, Chicago.
42 Compulsory Sterilization and Segregation of Mental Defective. H. M. Carey, Odessa, Del.

V. 61 1913

43 **Inheritance of Some Elements of Hysteria.** C. B. Davenport, Cold Spring Harbor, N. Y.
44 Hexamethylenamin in Ophthalmology. H. S. Gradle, Chicago.
45 Rôle of Tarsus in Trachoma. H. W. Woodruff, Joliet.
46 Relation of Local Disease of Ear to Systemic Disease. G. C. Ottrich, Belleville.
47 Relation of Eyes to Nose and Accessory Sinuses in Disease. L. J. Hughes, Elgin.

Iowa State Medical Society Journal, Washington

November, III, No. 5, pp. 279-336

48 Mechanical or Forcep Delivery. N. C. Morse, Eldora.
49 Simple Method of Catheter Retention after Suprapubic Cystotomy. L. Schooler, Des Moines.
50 Use of Subconjunctival Injections in Treatment of Eye Disease. L. Weber, Davenport.
51 Surgical Physiology. J. T. McClintock, Iowa City.
52 Prophylaxis of Insanity. M. E. Witte, Clarinda.
53 Clinical Significance of Reflexes. T. B. Throckmorton, Des Moines.

Journal of Biological Chemistry, Baltimore

November, XVI, No. 2, pp. 187-330

54 *Fate of Protein Digestion Products in Body: Determination of Amino Nitrogen in Tissues. D. D. Van Slyke, New York.
55 Idem: Absorption of Amino-Acids from Blood by Tissues. D. D. Van Slyke and G. M. Meyer, New York.
56 *Idem: Locus of Chemical Transformation of Absorbed Amino-Acids. D. D. Van Slyke and G. M. Meyer, New York.
57 Idem: Effects of Feeding and Fasting on Amino-Acid Content of Tissues. D. D. Van Slyke and G. M. Meyer, New York.
58 *Influence of Salts Common in Alkali Soils on Growth of Rice Plant. K. Miyake, Sapporo, Japan.
59 Determination of Oxybutyric Acid. P. A. Shaffer and W. M. Marriott, St. Louis.
60 *Determination of Acetone. W. M. Marriott, St. Louis.
61 Nephelometric Determination of Minute Quantities of Acetone. W. M. Marriott, St. Louis.
62 Determination of B-Oxybutyric Acid in Blood and Tissues. W. M. Marriott, St. Louis.
63 *Endogenous Metabolism of Pig as Modified by Various Factors: Effects of Acid and Basic Salts, and of Free Mineral Acids on Endogenous Nitrogen Metabolism. E. V. McCollum and D. R. Hoagland, Madison, Wis.
64 *Idem: Influence of Fat Feeding on Endogenous Nitrogen Metabolism. E. V. McCollum and D. R. Hoagland, Madison, Wis.
65 *Idem: Influence of Benzoic Acid on Endogenous Nitrogen Metabolism. E. V. McCollum and D. R. Hoagland, Madison.
66 Non-Interference of "Ptomains" with Certain Tests for Morphin. J. Rosenbloom and S. R. Mills, Pittsburgh.

54. Amino Nitrogen in Tissues.—Van Slyke's work was done as follows: The amino-acids are extracted from the tissues with hot water. Uncoagulated proteins in the extract are precipitated by alcohol. Alcohol and the slight amount of ammonia present in the extract are removed by concentration in vacuum, and the amino nitrogen in the residue is determined by the nitrous acid method. The rapidity with which the amino nitrogen reacts with nitrous acid, and the relatively small increase which it shows as the result of hydrolysis of the extract with hydrochloric acid, indicate that the amino nitrogen determined by the method outlined represents approximately the *free a-amino-acids*. Only a few per cent. of the amino nitrogen appears due to proteins or their intermediate products, and to amines not of protein origin. The correction for the latter can, when desirable, be readily determined.

56. Transformation of Absorbed Amino-Acids.—Van Slyke and Meyer show that the absorbed amino-acids (glycocoll, hydrolyzed casein, artificially digested flesh) disappear rapidly from the liver. The amino nitrogen content of this organ may be doubled by an injection of amino-acids into the general circulation, and yet return to normal within two or three hours. During the period required by the liver entirely to rid itself of absorbed amino-acids, their concentration in the muscles suffers no appreciable fall. From the other organs (kidney, intestine, pancreas, spleen) the absorbed amino-acids disappear less rapidly than from the liver, but whether as slowly as from the muscles has not yet been determined. The disappearance of amino-acids from the liver is accompanied by an increase in the urea of the blood. These results support the long contended view that the liver is the organ especially responsible for the catabolism of those protein digestion products not utilized for tissue construction.

The following explanation made by the authors as being consistent with the facts thus far ascertained. The amino-acids, with perhaps some peptides, from the intestine enter the circulation, from which they are almost immediately absorbed by the tissues. The power to take them up from the blood-stream is common to all the tissues, but is limited. The liver, however, continually desaturates itself by metabolizing the amino-acids that it has absorbed, and consequently maintains indefinitely its power to continue removing them from the circulation, so long as they do not enter it faster than the liver can metabolize them. When the entrance is unnaturally rapid or when the liver is sufficiently degenerated, as observed clinically in some pathologic conditions, the kidney assists in removing the amino-acids by excreting them unchanged. Death may result when the above agencies for preventing undue accumulation of protein digestion products are overtaxed. In regard to the synthesis of tissue proteins, the authors believe that, since each tissue has its own store of amino-acids, which it can replenish from the blood, it uses these to synthesize its own proteins.

58. Influence of Salts on Growth of Rice Plant.—The injurious effect of certain metallic ions on the growth of rice seedlings, Miyake says, may be perfectly counteracted only by the presence of calcium ions. Strontium ions can exert an influence only slightly retarding the toxicity of the metallic ions. Barium ion not only has no beneficial action, but a depressing effect is observed. Consequently, it is concluded that barium and strontium cannot replace the antagonistic action of calcium.

60. Determination of Acetone.—The author states that the Messinger method for acetone estimation gives correct results, whereas the Scott-Wilson method gives accurate results only when certain modifications in the original procedure are made. It is applicable to very minute quantities of acetone. Marriott found that in distilling a very dilute acetone solution, all of the acetone may be collected in the distillate within ten minutes.

63. Endogenous Nitrogen Metabolism.—Data are presented by McCollum and Hoagland which show that the endogenous metabolism of the pig reaches its lowest level when the animal has an abundant supply of carbohydrates together with a salt mixture of an alkaline character. The total output of nitrogen derived from endogenous sources can be greatly increased without changing the output of creatinin. The additional nitrogen which is eliminated on an acid over what appears on an alkaline diet is in the form of ammonia. The animal is not able to use the nitrogen of the urea fraction to neutralize the acids present in the diet, but draws additional nitrogen from the tissues for ammonia production.

64. Idem.—Feeding fat as the sole source of energy, it is claimed by McCollum and Hoagland, does not lead to a sustained rise in the nitrogen output of pigs which have been reduced to their lowest possible level of nitrogen metabolism by long continued starch feeding. Fat feeding may produce a considerable elimination of creatin. The total creatinin (creatinin + creatin) may be greatly increased without a corresponding rise in the total nitrogen output. The possibility of the acid or basic character of the ration having an influence on the creatin production is suggested.

65. Idem.—A considerable amount of the nitrogen which appears in the form of urea in pigs reduced to the endogenous level of protein metabolism, McCollum and Hoagland claim, may be converted into glycocoll when benzoic acid is fed, for the purpose of hippuric acid synthesis. When the quantity of benzoic acid ingested is not excessive, there is no noticeable rise in the total nitrogen excreted, over that which is eliminated on the same diet without benzoic acid. When the quantity of benzoic acid ingested is very large, there is a marked increase in the output of total nitrogen catabolized. The urea nitrogen cannot be reduced to a lower level than about 20 per cent. of the total. No change in the creatinin output is observed when the protein catabolism is stimulated by excessive doses of benzoic acid. Endogenous protein metabolism appears to consist of at least two types. One can be stimulated greatly for ammonia production by the introduction of mineral acids, or for hippuric acid when benzoic acid is introduced; the other, measured by creatinin, remains unaffected by methods described.

Journal of Medical Research, Boston

October, XXIX, No. 1, pp. 1-146

67 *Distribution of Vital Stains in Animals with Inoculable Tumors. I. Levin, New York.
68 *Experimental Streptococcic Arthritis in Monkeys. O. M. Schloss and N. B. Foster, New York.
69 Action of Human Blood-Serum on Guinea-Pig Erythrocytes. W. T. Cummins, San Francisco.
70 *Presence of Tubercle Bacilli in Feces. A. T. Laird, G. L. Kite and D. A. Stewart, Trudeau, N. Y.
71 Cultural Amebae: Study in Variation. A. W. Williams and G. N. Calkins, Columbia, N. Y.
72 *Study of Experimental Nephritis Caused by Salts of Tartaric Acid. R. M. Pearce and A. I. Ringer, Philadelphia.
73 Morphology of Functional Depression in Nerve Cells and Its Significance for Normal and Abnormal Physiology of Cell. D. H. Dolley, Columbia, Mo.
74 *Thrombosis and Occlusion of Lymphatics. E. L. Opie, St. Louis.

67. **Distribution of Vital Stains.**—The results of Levin's investigation seem to indicate that the vital stains when introduced into an animal with an inoculable tumor do not show any specific distribution which would show a predilection for the cells of the inoculated tumors. The organ cells surrounding the tumor contain the normal quantity of the vitally stained cells, while the tumor itself either contains none or very few such cells. It is of interest, though, to note that of the two tumors used in this investigation the carcinoma did not show any of the vital stains while sarcoma showed a certain amount. Levin suggests that a chemical may influence one kind of tumor and not influence another.

68. **Experimental Streptococcic Arthritis in Monkeys.**—Inoculations of cultures of *Streptococcus pyogenes* into the blood-stream of four monkeys induced a polyarthritis, suggestive in certain respects of "rheumatic fever" in man. In three instances immunity to the infectious agent was observed after repeated inoculations. The infecting organism could be recovered from the blood-stream at the onset of symptoms, but not afterward. This fact possibly has some bearing on the failure to isolate organisms from the blood of man with "rheumatic fever." Recovery from the induced arthritis may be complete and in such cases no lesion is found in the joint or periarticular tissues at autopsy. Repeated inoculations of streptococci induced a chronic arthritis in two cases, which was manifested by limitation of motion and contracture. In these affected joints there was found at autopsy thickening of the periarticular structures, thickening of the synovial membrane with fibroid infiltration and fringes of tissue growing into the joint which suggest villous formation. There was in one case also erosion of the cartilages. These lesions are analogous with those found in some types of chronic arthritis in man. Agglomerations of specifically staining cells were noted in the heart muscle, kidney, liver, spleen and periarticular tissues.

70. **Tubercle Bacilli in Feces.**—The authors briefly summarize their work as follows: Nearly all patients with tubercle bacilli in their sputum also have virulent tubercle bacilli in their feces. Very few persons who do not have tubercle bacilli in their sputum have acid-fast bacilli in their feces.

72. **Experimental Nephritis.**—Pearce and Ringer found that the administration to the dog of tartrates, by mouth, intraperitoneally or subcutaneously, causes a severe renal disturbance characterized by albumin and casts in the urine and diminished flow of urine or complete anuria. The urine passed before complete suppression is water clear of low specific gravity, and the solid constituents are greatly decreased. The most striking histologic change in the kidney is necrosis of the convoluted tubules, with fatty changes in the loops of Henle and sometimes also in the collecting tubules. Exudative glomerular lesions occur in about half the animals with severe tubular lesions. The mode of administration does not influence the character of the renal lesion, except in as much as diarrhea, following administration by mouth, may cause rapid removal of the salt from the intestine, and thus by reducing the amount of absorption prevent the severer types of lesion.

74. **Thrombosis and Occlusion of Lymphatics.**—A number of experiments were performed by Opie to test the effect of different tissues on the coagulation of lymph. He found that the slow coagulation of lymph is hastened by the addition of thrombokinase, and thrombosis within lymphatic channels occurs when thrombokinase is liberated by the tissues in the wall of the lymphatic. Necrosis of cells in contact with the lymph-stream favors thrombosis within lymphatic vessels by bringing thrombokinase into contact with the circulating lymph. After ligation of large lymphatic channels thrombosis may be caused by the injection of bacteria (*Bacillus pyocyaneus, Staphylococcus pyogenes aureus*) into the blood or by infection of the tissues in the neighborhood of the lymphatic channel. Occlusion of the thoracic duct or of large lymphatic trunks is followed by transient edema which is relieved in part at least by the establishment of collateral lymphatic circulation. After ligation of the thoracic duct flow of lymph into the vascular system may be reestablished within from two to four days: (a) by formation of a new channel entering the proximal part of the ligated duct, or (b) by collaterals freely joining the right thoracic duct; (c) in other instances no reestablishment of communication with the vascular system could be demonstrated but there was no widespread edema. Copious chylous ascites may follow occlusion of the thoracic duct in association with injury to a mesenteric lymphatic vessel. In a few instances continued diarrhea follows occlusion of the thoracic duct.

Journal of Outdoor Life, New York

November, X, No. 11, pp. 321-350

*75 How to Win the Fight. E. J. Hoyt, Liberty, N. Y.
76 Doctor and Patient. E. R. Remy, New York.
77 Anti-Tuberculosis Movement in Rio De Janeiro. T. B. Duarte, New York.
78 Magic Mattress. M. M. Ogilvie, Louisville, Ky.
79 Tuberculosis Nursing as Profession. M. F. Sloan, Towson, Md.

Kentucky Medical Journal, Bowling Green

November 1, XI, No. 22, pp. 925-966

80 Symptomatology and Diagnosis of Gall-Bladder Disease. J. B. Lukins, Louisville.
81 Medical Treatment of Cholecystitis. W. F. Boggess, Louisville.
82 Indications for Surgery in Gall-Bladder Disease. L. Frank, Louisville.
83 Surgery of Gall-Bladder. J. D. Jackson, Danville.
84 After Treatment and End Results in Gall-Bladder Surgery. F. H. Montgomery, Denville.
85 Acute Anterior Poliomyelitis. W. L. Mosby, Bardwell.
86 Intestinal Parasites. T. A. Frazer, Marion.
87 Health Healers Healing. A. J. Andrews, Lexington.
88 Appendicitis. J. H. Caldwell, Cincinnati.

Medical Record, New York

November 15, LXXXIV, No. 20, pp. 875-920

89 Rest and Exercise for Tuberculous and Predisposed Child at School. S. A. Knopf, New York.
90 Architecture of Open-Air Schools. J. V. Van Pelt, New York.
91 Premonitory Aurae in Inebriety. T. D. Crothers, Hartford, Conn.
92 Cases of Tumor of Lungs and Mediastinum Simulating Pulmonary Tuberculosis. W. H. Swan, Colorado Springs, Colo.
93 Pruritus Ani Pertinax. W. P. Cunningham, New York.
94 Value of Typhoid Vaccination in Civil Communities. R. E. Ebersole, Ellis Island, N. Y.
95 Transplantation of Bone for Flail Joint Produced by Inflammatory Destruction of Joint. A. O. Wilensky, New York.
96 Diphtheria Carrier Treated with Culture of Staphylococcus Pyogenes Aureus. I. E. Biskow, Chicago.
97 New Colostomy Apparatus. H. B. Delatour, Brooklyn.
98 Perineorrhaphy Retractor. A. Reich, New York.

New York Medical Journal

November 15, XCVIII, No. 20, pp. 945-996

99 Family Substance and Theory of Coincident Disease in Blood Relations. B. Holmes, Chicago.
100 Medical Care of Aged. I. L. Nascher, New York.
101 Sexual Theories Formed in Early Childhood, and Their Rôle in Psychoneuroses. H. W. Frink, New York.
102 Ocular Vertigo. A. Bray, Philadelphia.
103 Vincula Praeteritorum. W. P. Cunningham, New York.
104 Laboratory Studies of Manic Depressive Group. J. A. Jackson, Philadelphia.
105 Charity: Some Thoughts on Its Use and Abuse. H. E. Tompkins, New York.
106 Blood-Letting Apparatus. E. C. Burrows, New York.
107 Clinical Observations on Cancer; Its Treatment and Cure by Chemicals Alone. K. F. Junor, Brooklyn.

Northwest Medicine, Seattle, Wash.

November, V, No. 11, pp. 299-328

108 Some Features of Medical Practice. R. E. Ringo, Pendleton, Ore.
109 Cysts of Brain and Case of Cerebellar Cyst, with Pathology and Diagnosis. L. Selling and A. E. Rockey, Portland, Ore.
110 Tonsil Operation. S. E. Wright, Portland, Ore.
111 Nephritis. E. B. Pickel, Medford, Ore.
112 Inspection and Immunity, Related Methods of Diagnosis and Bacteriotherapy. J. P. Tamiesie, Portland, Ore.

V. 61
1913

Oklahoma State Medical Association Journal, Muskogee

November, VI, No. 6, pp. 229-274

113 Pathologic Thyroid Gland and Its Treatment. F. Y. Cronk, Guthrie.
114 Cholelithiasis, Cholecystitis and Cholangeitis. D. F. Stough, Geary.
115 Plea for More Rational Intervention in Obstetric Complications. W. A. Fowler, Oklahoma City.
116 Submucous Resection of Nasal Septum. W. A. Cook, Tulsa.
117 Treatment of Corneal Ulcers with Special Reference to Use of Methylene Blue. M. Wiener, St. Louis.
118 Pellagra; New Theory of Its Etiology. J. R. Callaway, Pauls Valley.

Ophthalmic Record, Chicago

November, XXII, No. 11, pp. 645-702

119 Cataract Extraction with Conjunctival Bridge. R. S. Lamb, Washington, D. C.
120 Lid Elevator. W. A. Fisher, Chicago.
121 New Irrigation Basin. J. G. Clark, Columbus, O.
122 Existence and Prevalence of Trachoma among Indians of Northern United States and Canada. W. H. Harrison, Browning, Montana.
123 Case of Sarcoma of Orbit. C. E. Ide, Los Angeles.
124 Orbital and Ocular Neuralgia due to Dental Irritation. H. V. Würdemann, Seattle, Wash.

West Virginia Medical Journal, Wheeling

November, VIII, No. 5, pp. 143-178

125 Pathology, Diagnosis and Treatment of Malignant Tumors of Breast. J. B. Deaver, Philadelphia.
126 Early Diagnosis and Treatment of Malignant Tumors. J. E. Burns, Wheeling.
127 Glaucoma. E. E. Gibbons, Baltimore.
128 Toxemia of Pregnancy, with Special Reference to Eclampsia. A. V. Weinberg, Wheeling.
129 Report of International Congress of School Hygiene. R. H. Edmondson, Morgantown.

Wisconsin Medical Journal, Milwaukee

October, XII, No. 5, pp. 131-170

130 Pathologic and Therapeutic Possibilities of Upper Maxillary Contraction and Expansion. G. V. I. Brown, Milwaukee.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

November 1, II, No. 2757, pp. 1125-1192

1 *Chronic Intestinal Stasis. W. A. Lane.
2 Idem. S. Bainbridge.
3 *Visceral Complications Met with in Hysterectomy for Fibroids. J. Bland-Sutton.
4 *Treatment of Spastic Paraplegia (Little's Disease). E. M. Little.
5 *Hereditary Transmission of Sarcoma. J. S. Manson.
6 *New Method of Dealing with Scars by Multiple Incision and Thiosinamin. A. H. Tubby.
7 School Clinics in Relation to Prevention of Myopia. J. Hern and A. F. MacCallan.
8 Criticism of Sight Tests of Board of Trade. F. W. Edridge-Green.
9 Treatment of Chronic Dacryocystitis. T. H. Butler.
10 Supercorneal Sutures and Operation for Conical Cornea. E. E. Maddox.
11 Nystagmus: One Hundred Cases, Chiefly Ordinary or Non-Miners' Nystagmus. J. A. Wilson.
12 Question of Excision of Eye in Cases of Injury. M. L. Hepburn, R. A. Greeves and S. H. Browning.
13 Persistence of Nerve Plexus of Iris after Excision of Certain Ganglia. W. B. I. Pollock.

1. **Chronic Intestinal Stasis.**—It is Lane's rule to be satisfied with ileocolostomy if it is difficult to remove the large bowel, and to remove it if it can be effected easily. This is a very practical and convenient rule. He never performs gastro-enterostomy for duodenal distention even if there be ulceration, as it is both unnecessary and harmful. If, however, the ulceration has resulted in a considerable reduction of the lumen of the bowel, either by the great extent of the ulceration or because of its cicatrization, he employs a gastro-enterostomy, having first freed the ileal effluent by an ileo-colostomy, or by the other means already referred to. If the stomach be much dilated, because of chronic spasm of the pylorus, to such an extent that, after short-circuiting, the spasm cannot be met by washing out the stomach for several days, he performs gastro-enterostomy. If the stomach be ulcerated and there be no suspicion of cancerous infections in addition to a short-circuit, with or without colectomy, Lane does gastro-enterostomy, in order to take the strain off the lesser curve by draining the stomach very effectually. The only risk, Lane says, presented by the operations of short-circuiting and colectomy is that of adhesion of the intestines to one another, or to the abdominal wall, in such a manner as to produce a varying degree of obstruction. This is a risk common to all abdominal operations, and can only be reduced to a minimum by avoiding any unnecessary exposure or damage of the intestine, and by suturing the cut surfaces of peritoneum accurately together.

3. See *The Lancet*, abstract 29.

4. **Treatment of Spastic Paraplegia.**—The immediate objects of surgical treatment, Little states, are as follows: Correction of deformity, and abolition or diminution of spasm, with the ultimate end in view of enabling the patient to place the limbs in such a position that he may use them properly, but before undertaking any treatment the surgeon must form an estimate of the mental capacity of the patient. If this seems to be normal or even approaching to normal, it is worth while to undertake thorough and long-continued treatment, in the belief that the patient's will power and intelligence will enable him to take advantage of every improvement. If, however, the patient is idiotic, there is little hope of his learning to use his muscles, and disappointment is nearly sure to follow treatment. In a case of doubtful intelligence it is desirable to give the patient the benefit of the doubt, and to undertake the treatment, always remembering on the one hand that parents generally overestimate the intelligence of these children, and on the other that improvement in the physical condition is nearly always accompanied by improvement in the mental condition, sometimes to a surprising extent. Almost all observers are agreed on this point, and also in the opinion that treatment must be patient, prolonged and persevering.

5. **Hereditary Transmission of Sarcoma.**—Manson gives account of the illness and deaths of a mother and two sons from sarcoma, which he thinks justifies the title of his article.

6. **New Method of Dealing with Scars.**—The following method is described by Tubby: With a fine and strong-backed tenotomy knife a large number of multiple incisions are made transversely to the bands of keloid material. The incisions are placed close together, not more than one-tenth of an inch apart; and great care is taken that they should penetrate not only into the subcutaneous fat, but also extend one-quarter or half inch into the neighboring healthy skin. No attempt is made to arrest the hemorrhage except by pressure, and when bleeding has ceased, a solution of thiosinamin is vigorously rubbed in; and, if the scar tissue is very thick, a few drops are injected into the most prominent bands. Tubby has no hesitation in injecting, in children, 15 min. at a time, and in adults 20 min.; in only one case was there any effect on the heart. In that instance some slight cardiac collapse occurred for a few minutes; the patient, however, was over 60 years of age, and, happily, no permanent ill results followed. After the operation, the part is put up on a splint, in as much extension as possible, without tearing the soft parts, and is allowed to heal. This is accompanied by no excessive reaction and very little pain. After ten or fourteen days the wound will be healed, and the mobility of the part is increased by 50 per cent. The operation is then repeated, and, Tubby says, it rarely may be required three or four times. He has carried out this method in over a dozen cases, and has been specially pleased with the results.

Indian Medical Gazette, Calcutta

September, XLVIII, No. 9, pp. 337-376

14 Iodin as Aid to Aseptic Vaccination. E. E. Waters.
15 Relapsing Fever in Bulandshahr District, U. P., 1912-1913. R. Steen and R. S. Townsend.
16 Inquiry into Malaria and Mosquitoes in Kashmir Valley. J. R. Adie.
17 Investigations into Incidence of Malaria in Town of Arambagh, Nooghly District. S. L. Sarkar.
18 Four Indigenous Drugs. R. H. N. Ghosh.
19 Night-Soil Incineration in Cantonments. P. Hehir.

Journal of State Medicine, London

October, XXI, No. 10, pp. 577-640

20 Coagulation of Blood. J. Bordet.
21 Open Spaces. B. Holmes.
22 Etiology of Cholera Asiatica. R. Emmerich.
23 Problem of Surgical Tuberculosis among (A) Uninsured and (B) Insured Persons. H. O. West.
24 Relation of Eugenic Education to Public Health. A. C. Gotto.

Lancet, London

November 1, II, No. 4705, pp. 1235-1298

25 Influence of Harvey's Work in Development of Doctrine of Infection and Immunity. J. M. Bruce.
26 Nature and Degree of Specific Differences among Bacteria. F. W. Andrewes.
27 Two Years' Experience with Salvarsan. M. Morris and H. MacCormac.
28 Arteriovenous Aneurysm of Axillary Vessels of Thirty Years' Duration. W. Osler.
29 *Visceral Complications Met with in Hysterectomy for Fibroids. J. Bland-Sutton.
30 Case of Hypophysis Tumor and Sellar Decompression. W. Harris and C. Graham.

29. **Visceral Complications in Hysterectomy for Fibroids.**—Fibroids, says Bland-Sutton, are often present in women suffering from chronic cardiac disease, and it has been maintained by several writers that uterine fibroids cause degenerative change in the muscular tissue of the heart. Many patients with fibroids have valvular lesions, a consequence of rheumatic fever, and in many women who have been reduced to a condition of profound anemia by a submucous fibroid the heart yields a loud murmur on auscultation. Bland-Sutton has had careful observations made on the cardiac condition of women with fibroids, and he says there is nothing which can be described as peculiar to the influence of these tumors. On a dozen occasions he has removed the uterus containing large fibroids, although the heart has furnished murmurs, clearly due to valvular lesions, when an examination by a competent physician has shown that compensation has been satisfactory and that an operation would not be attended with unusual risks. On three occasions he has removed a uterus containing fibroids from women who at the time of the operation possessed goiters and has been surprised on seeing the patients six months after hysterectomy to notice marked dimunition in the size of the goitrous thyroids. The presence of sugar in the urine, is, as a rule, a contra-indication to hysterectomy for fibroids. All patients requiring hysterectomy who come under Bland-Sutton's care have their urine carefully examined for sugar. Gall-stones are common in women; so are fibroids; and it sometimes happens that women come under observation with the two conditions giving so much trouble that the surgeon is puzzled to know which should be dealt with first. On three occasions Bland-Sutton has removed a calculous gall-bladder in the course of hysterectomy for fibroids. In each instance the uterus was so large as to require for its removal an incision reaching nearly to the ensiform cartilage. In these circumstances the removal of the gall-bladder was a simple operation. In one instance the inflamed gall-bladder adhered to a large subserous fibroid. In two other instances of this combination he removed the gall-bladder six months after the hysterectomy. The only definite rule which he thinks can be laid down in the matter is this: If a woman deeply jaundiced in consequence of a stone impacted in the common duct also suffers from a uterine fibroid, which so troubles her as to make it desirable to remove the uterus, he should prefer to remove the stone from the common duct first because it is well known that cholemia predisposes to hemorrhage. Hysterectomy in a woman with persistent jaundice is an operation which would place her life in the gravest peril from post-operative bleeding.

Medical Press and Circular, London

September 24, XCVI, No. 3881, pp. 333-358

31 Diagnosis of Chronic Ulcer of Stomach and Duodenum. J. Sherren.
32 Roentgen Rays in Diagnosis of Abnormalities in Intestinal Tract. M. R. J. Hayes.
33 Heredity and Skull Form. W. H. Broad.
34 Treatment of Tuberculous Joints by Internal and External Use of Iodin. T. Dutton.
35 Leprosy Bacillus and Allied Bacilli. E. R. Rost.

October 1, No. 3882, pp. 359-384

36 Meningeal Reactions in Course of Poliomyelitis. V. Hutinel.
37 *Nauheim Treatment in England. L. T. Thorne.
38 Hilus Tuberculosis (Root Phthisis). R. M. Leslie.
39 Necessity for State-Endowed Hospitals and State Medical Service. J. C. M'Walter.
40 Relations of Anemia to Achylia and Gastritis Chronica. K. Faber.
41 Medical Treatment of Piles. C. Dubs.

October 8, No. 3883, pp. 385-410

42 Practical Consideration of Vaccine Therapy. W. Wingrave.
43 Malingering. F. S. Palmer.
44 Acute Rheumatism. F. J. Poynton and A. Paine.
45 Treatment of Skin Affections by Solid Carbon Dioxid. J. L. Bunch.
46 Some Rhenish Surgery. W. Doolin.

37. **Nauheim Treatment in England.**—The post-influenzal heart, weakened and dilated by the toxins of the disease, and giving rise to symptoms of dyspnea, palpitation and cardiac pain, and ultimately causing a general invalidism and inability for any work or pleasure, Thorne says, is one which responds rapidly to this treatment. Cases of high arterial tension, in which the area of cardiac dulness is found to be enlarged, exhibiting symptoms of dyspnea, headache, palpitation, cyanosis and general ill-health, will respond well to a course of Nauheim baths, and the blood-pressure will drop from 20 to 40 mm. Hg during treatment, often falling from 170-80 mm. Hg to 130-40 mm. Hg, and the troublesome and dangerous symptoms will be relieved for a long period. Cases of valvular disease with cardiac dilatation, indicating a weakened and degenerate condition of the myocardium, respond well to the treatment, more especially if high arterial tension is present.

In uncomplicated cases of valvular disease with cardiac hypertrophy treatment is not necessary, but it is seldom that a case of valvular disease of long standing with a raised blood-pressure does not exhibit some symptoms of cardiac dilatation and defective circulation, and if these are present they can be relieved by a course of baths more satisfactorily and for a longer period than by any other form of treatment. When premature cardiac contractions, arising in the ventricles or auricles, are present, causing cardiac irregularities and distress to the patient, it is often found that they gradually decrease in frequency during a course, and that at the end of the treatment a perfectly regular heart's action is established, this being due to the improved nutrititon of the conductive mechanism of the heart. Cases of obesity and fat-clogged hearts and raised blood-pressure are not only greatly improved in health by a course of Nauheim baths, but lose fat steadily both during the course and for some months after.

Cases of irritable heart of a "functional" nature, in which no organic lesion is discovered, are often greatly relieved by this treatment, but they are not so certain of improvement as cases in which definite dilatation is present. Cases of anemia with cardiac dilatation, which do not respond to treatment with iron, arsenic or general hygienics, will often show immediate improvement if a course of Nauheim baths is given in conjunction with other treatment. Thorne states that it is not advisable to give the Nauheim treatment in cases in which there is general evidence of a broken-down constitution, nor has he found it of much benefit to patients exhibiting auricular fibrillation, or in those in which very advanced degeneration of the vessel-walls is present.

Practitioner, London

November, XCI, No. 5, pp. 589-714

47 *Widal's Agglutination Reaction as Aid in Prognosis in Enteric Fever. H. H. Scott.
48 Diagnosis and Treatment of Hemic Infection of Urinary Tract. F. Kidd.
49 Recent Work on Anesthesia. J. Blumfeld.
50 Law and Medicine, 1912-1913. W. A. Brend.
51 Recent Work on Diseases of Lungs. A. J. Jex-Blake.
52 Tuberculin in Diagnosis and Treatment of Pulmonary Tuberculosis. J. K. Patrick.
53 Tuberculin in Diagnosis and Treatment of Tuberculosis. A. D. S. Cooke.
54 Rational Treatment of Cancer. De Keating-Hart.
55 So-Called Movable Kidney Disease. G. Monod.
56 Infantilism. C. E. Zundel.
57 *Effect of Nauheim Baths on Cardiac Conductivity. L. T. Thorne.
58 Symptomatology of Cholelithiasis. C. M. Kennedy.
59 *Is Enlarged Prostate the Cause of Residual Urine? A. G. Miller.
60 Relation between Pancreas and Diabetes. T. S. Tirumurti.
61 Acute Pemphigus due to Infection by Diplococcus. G. W. M. Custance.
62 Effect of Mental State, of Minor and Major Attacks in Epileptic Insanity. S. J. A. H. Walshe.
63 Physicians in Decameron. J. B. Adams.

47. **Widal's Agglutination Reaction.**—The main point made by Scott is the value of the agglutination reaction as an aid

V. 61
1913

in prognosis. If the case is "clinically typhoid" but no agglutination is obtained by the tenth day, Scott says, the case is likely to be severe and prolonged. Not uncommonly a hemorrhage in these cases will, within a few hours (provided it is not fatal), be followed by a marked rise in the agglutinating power of the serum. Scott is inclined to think that in some of such cases benefit would result, if nature were to be forestalled by a small quantity of blood being withdrawn by venesection, and the agglutinating power of the serum thus raised.

57. **Cardiac Conductivity.**—Thorne cites cases to show that the action of Nauheim baths on cardiac conductivity and muscle contraction is very beneficial, for it not only accelerates a slow, and regulates an irregular conductivity, but markedly stimulates auricular contraction.

59. **Is Enlarged Prostate Cause of Residual Urine?**—The question asked in the title is answered by Miller in the negative because he has seen cases in which there was enlarged prostate without any residual urine, and others in which there was residual urine without any perceptible enlargement of the prostate. In patients who present themselves for treatment, especially at hospitals, the two conditions usually co-exist. Miller submits this might be because both conditions are common in old men. If each occurs sometimes separately, surely neither can be considered the invariable cause or result of the other. They cannot be mutually inter-dependent. In Miller's opinion residual urine is the result of an acquired habit of not emptying the bladder thoroughly. No doubt an enlarged prostate, by making micturition more difficult, increases this habit or may start it. But, that "habit" is the explanation is Miller's conviction, because residual urine can be got rid of by training the bladder to empty itself thoroughly even when enlargement of the prostate is present.

Annales de Gynécologie et d'Obstétrique, Paris

October, XL, No. 10, pp. 561-624

64 Pathogenesis of Traumatic Lesions of the Orbit during Forceps Delivery. Lévy.
65 Pedunculated Thrombus in the Vagina in Two Pregnant Women. J. Potocki and C. Sauvage.
66 The Arterial Blood-Pressure Rises during Onset of Lactation. Audebert and Etchevers.

Annales de Médecine et Chirurgie Infantiles, Paris

October 15, XVII, No. 20, pp. 669-704

67 *Obesity in Children. P. Le Gendre.

67. **Obesity in Children.**—Le Gendre's article has already been mentioned in THE JOURNAL, November 8, p. 1739. He emphasizes that obesity is a progressive syndrome from changes in the functioning of the nervous system regulating the deposits of fat; these disturbances are the result of the action of toxins from within or without. The obesity is first a symptom, then a syndrome, and then a disease, and it is important to arrest it in its early phases. Obesity may be regarded as physiologic in a breast-fed infant with good general health; the weight generally returns to the normal standard after the child begins to walk. There is also a physiologic obesity just before puberty which the children outgrow. Under all other conditions he regards a progressive increase in fat under ordinary circumstances as a sign that something is wrong and requires correction; if not corrected, other functional disturbance will develop not dependent on the obesity but on the nutritional anomaly of which the obesity is only one manifestation. An inherited predisposition is evident in the majority of cases; such children generally belong to families of large eaters through several generations, and the obesity in the children can be traced to this gouty, neuro-arthritic inheritance with sluggish elimination. He discusses the influence of the glands with an internal secretion, and says that the importance of correcting the causes entailing obesity in children is enhanced by the fact that the obesity prevents the child's taking part in the plays of its mates. Treatment should aim to correct the errors in hygiene and diet and the insufficiency of the thyroid, genital or other glands involved. The table in certain families, he remarks, seems to be planned to bring on obesity, or the children are given beer or wine which injures their digestion and nervous system. In certain families the parents demand too much of the children so that they reach school wearied and worried over their tasks and lessons, their walk to school interfering with digestion. Then they are liable to play too hard and exhaust themselves and forget to go to stool at regular hours. He thinks that walking may be carried to excess for children; their bones are not fitted for prolonged regular walking. It is valuable only in small doses, but a few minutes of exercises and games which have a tendency to increase the ventilation of the lungs are particularly useful. The great difficulty in the family is that the parents like to see the child eat and fear "it is not getting enough."

Journal de Chirurgie, Paris

October, XI, No. 4, pp. 469-532

68 *Operative Treatment of Infectious Processes in the Palm of the Hand. R. Picqué.

68. **Infectious Processes in the Palm of the Hand.**—Picqué describes with fourteen illustrations the best technics for operating on infectious processes in muscle or tendon sheaths in the palm. Eight of the illustrations are devoted to the normal anatomy of the region at different depths. For a phlegmon in the palm, he makes two incisions, radiating from the center of the palm near the root of the thumb, but for suppuration in the tendon sheaths he makes four, one along the ball of the thumb, the second an extension of this along the front of the thumb. The third incision runs at a right angle from the first and reaches nearly to the root of the little finger. The fourth is the extension on the palmar aspect of the little finger of the third incision. By this quadruple incision, total suppurating palmar synovitis can be reached and treated without injury of the vessels. The two incisions run parallel to the vessels, but they are on the flank of the flexors and thus the vessels can be readily detected and drawn aside at need. The four drains introduced should converge toward the pus pocket but they should never be pushed forcibly in. He has seen the temperature drop from 104 to normal by the next morning after this quadruple incision which ensures transverse drainage on both sides. In case the trouble persists, from involvement of the wrist region, he divides the annular ligament after suturing the four incisions of the day before. No functional disturbances follow section of the annular ligament, while it permits ideal drainage of the region. If a phlegmon develops in the forearm, the two lateral incisions below should be carried up as needed. If the wrist proper suppurates, the dorsal incision according to the Ollier or Kocher technic, supplementary to the incisions in the palm, will permit X drainage. In one case he successfully performed all the above operations in turn in the course of forty-eight hours, an insane man having cut himself by breaking a window. Lecène cuts the annular ligament as one of the first steps, but Picqué advises the above sequence, restricting the intervention to what is actually needed at the moment.

Journal d'Urologie, Paris

October, IV, No. 4, pp. 533-732

69 *After Suprapubic Prostatectomy. G. Marion.
70 Impalement Injury of the Bladder. M. Gerard.
71 *Nephrostomy. (Moyen de dérivation permanente ou temporaire des urines totales.) J. Pakowski. Commenced No. 3.
72 *Failure of Tuberculin Treatment in Renal Tuberculosis. C. Gauthier.
73 Urethrocèles in Men. J. Paris and A. Fournier.
74 Irrigation of the Urethra without a Catheter. (Technique des lavages sans sonde de l'urètre.) J. Janet.

69. **Suprapubic Prostatectomy.**—Marion declares that the care after the operation is responsible for the ultimate outcome far more than the operation itself. Everything should be done to hasten the healing of the wounds and restore normal conditions in the bladder while keeping the general condition good, constantly on the watch to avert complications. He drains by means of a broad right-angled tube with small tube attached to permit irrigation of the bladder. The recess left by removal of the prostate is packed loosely with gauze to which two threads are firmly fastened, the ends of the threads brought out through the broad glass drain. The drain tube must reach deep down into the bladder to ensure

perfect draining; as the wound heals the tube is replaced with one of smaller diameter. The part reaching into the bladder is the same length in all. Some of his patients had the bladder heal in twelve days, others not until twenty-five or thirty days. The retention catheter must be kept in place nights for two nights after the bladder has healed, to avert distention during sleep. The less the parts are handled, the less danger of complications. He insists that the postoperative measures should be applied by the physician himself, unless he has a dependable nurse with long experience in exactly these cases. By taking charge of these minor details, the physician is kept in close touch with the patient and can detect and remedy unfavorable conditions at their first manifestations, while he is constantly learning new points in treatment which can be applied at the time and later.

71. **Advantages of Nephrostomy.**—Pakowski concludes his long article on this subject by emphasizing the importance of proceeding gradually, never attempting too much at one sitting, in operations on the urinary apparatus. A preceding nephrostomy on both sides, diverting the course of the urine, leaves the field below free for any operation that may be required. The mortality to date has been only 4.5 per cent., and in these cases the fatality was due to the affection for which the nephrostomy had to be done rather than to the nephrostomy itself. Implantation of the ureters in the skin, urethra, vagina or bowel has a high mortality at the time and from pyelonephritis later. Nephrostomy permits direct treatment of lesions in the kidney; it also permits restoration of the natural course of the urine later, while it drains the kidneys most effectually, and this is the only means of warding off ascending infection. Ureterostomy is its only rival, but this does not drain the kidney so well.

He reviews 119 cases of total cystectomy; sixty-seven patients did not survive the operation, the mortality thus being 56.3 per cent. The gravity of the prognosis in these cases is due to the unwise method of caring for the ureters. Four died at once of the five patients whose ureters were implanted in the urethra; nine out of sixteen soon died when the ureters were implanted in the vagina. The mortality was 67.2 per cent. in the fifty-five cases in which the ureters were implanted in the bowel. All these fatalities are due to shock, anuria, peritonitis or ascending infection—all of which is the result of the laborious technic of the implantation procedure or of defective sutures. The fatal factor in this high mortality is generally pyelonephritis; it may have existed prior to the operation, and this is an additional argument in favor of preliminary nephrostomy. This is the only means to estimate conditions in the kidneys and improve them before proceeding to the cystectomy or other operation below. The benefits of this are instructively shown in two cases related in detail: In the first preliminary bilateral nephrostomy was done ten days before the bladder was entirely removed for cancer. The general condition is very good to date, nearly a year since the operation. The nephrostomy was also intended to be permanent in the second case in which the bladder and prostate were removed for epithelioma; the man of 53 was a worker on anilin dyes. The first symptoms of trouble had been severe recurring hematuria. There was no shock after the cystectomy, but rebellious hiccough for a few days followed both the nephrostomy and the cystectomy. Pakowski regards double nephrostomy as indicated with all malignant, painful and rebellious affections of the bladder, as also with congenital malformations, and with affections of the pelvic organs invading the bladder or compressing the ureters; also in case of a persisting tendency to production of calculi in the kidneys. Nephrostomy may be the only means to correct nephrolithiasis. Nephrostomy may also be indicated as a preliminary to treatment or operation for traumatic lesions of the lower urinary apparatus, especially vesicovaginal fistula. The nephrostomy may be only temporary in these cases. Nearly twelve pages of bibliography are appended.

72. **Tuberculin Treatment of Renal Tuberculosis.**—Gauthier reports the end-results in a case of renal tuberculosis which he published last year as an instance of successful tuberculin treatment. Nephrectomy became necessary a few months later. This has destroyed his confidence in tuberculin treatment, as this is his fourth failure with it. He found it valuable in two other cases, in one of which both kidneys were involved, rendering nephrectomy impossible. His conclusions are in harmony with Albarran's dictum, *Diagnostic précoce, néphrectomie précoce.*

Lyon Chirurgical, Lyons

September, X, No. 3, pp. 221-328

75 *Retrogasserian Neurotomy for Neuralgia. (La résection physiologique du ganglion de Gasser dans le traitement des névralgies faciales rebelles.) F. de Beule.
76 *Parasitic Invasion as Cause of Malignant Degeneration of Benign Tumors of the Breast. M. Jaboulay.
77 Murphy's Arthroplastic Method for Ankylosis of the Hip Joint. Guillot and Dehelly.
78 *Stretching the Solar Plexus in Treatment of Gastric Crises in Tabes. R. Leriche and P. Dufourt.

October, No. 4, pp. 329-424

79 Inflammatory Ovarian Tuberculosis. (Les productions kystiques de l'ovaire liées à la tuberculose.) A. Pollosson and H. Violet.
80 Anatomic and Physiologic Aspects of Decapsulation of the Kidney. J. Murard.
81 Experimental Roentgenization of the Ovaries. A. Lacassagne.
82 *Stretching or Resecting Perivascular Nerves in Painful Arterial Affections or Trophic Changes. R. Leriche.

75. **Operative Treatment of Trigeminal Neuralgia.**—De Beule insists that resection of the root of the trigeminal nerve between the gasserian ganglion and the protuberance answers all the purposes of gasserectomy while it is a much simpler and safer operation. It does not destroy the nerve route but breaks its continuity by taking out a segment. He says that the nerve here is composed exclusively of white fibers, and white fibers once degenerated never regenerate anew, and consequently no transmission of pain is possible later, while the ganglion and the rest of the nerve are left intact. De Beule credits the method to Spiller of this country, but says that Van Gehuchten's research first rendered it practicable. All his eight patients have been permanently cured by the operation, and no by-effects have been observed. This technic has been applied in seventy cases to date, to his knowledge; two patients died. In one of De Beule's cases the patient died several months later and necropsy revealed a large cancer originating in the sphenoidal sinus. The pressure from the growth had evidently been the cause of the "neuralgia," but the patient was freed from pain thereafter by the neurotomy. This case is cited as strikingly confirming the theoretical premises on which the retrogasserian neurotomy is based. Seven plates accompany the article illustrating the technic and the ample access and oversight afforded by turning down a flap directly over the ear. The guide is the anterior surface and the upper margin of the petrous portion of the temporal bone, and this must not be forsaken on any pretext. The outer edge of the nerve is always found just inside the retrogasserian tubercle.

76. **Malignant Degeneration of Benign Tumors of the Breast.**—Jaboulay ascribes to invasion by a protozoon the transformation of benign mammary tumors. The sarcosporidia involved are not found in the same phases of development as in animals, but the cancerous degeneration follows on their trail. He gives eight illustrations of sporoblasts and spores found in a testicle sarcoma; sarcosporidia in a thyroid cancer; spores in a mammary tumor, showing patches of malignant degeneration, cystic disease, etc.

78-82. **Stretching the Perivascular Nerves for Painful Arterial and Other Disease.**—Leriche and Dufourt report four cases of tabetic gastric crises in which they applied stretching of the solar plexus. They state that the procedure caused no inconveniences of any kind and the immediate results were excellent, but they did not prove durable. They think that the principle is good, but that the technic to date is still defective. Leriche ascribes the failure in tabes to the fact that the lesion of the nerves is too diffuse and wide-spread to be affected by the operation. On the other hand, it offers every prospect of success in certain cases of intestinal pain of arterial origin which may be defined as Raynaud's disease of the intestine, as also in painful subacute aortitis: The

V. 61
1913

spread of the inflammation to the nerves around entails intense pain, liable to elicit fatal reflex action, vasomotor spasm of the coronaries, cerebral arteries or bronchial vessels. Other affections possibly amenable to this treatment are true Raynaud's disease and congenital trophoedema. In a case of the latter, Leriche states that the leg became reduced 2 cm. in circumference after denudation of the femoral artery in the triangle of Scarpa. Jaboulay has found this useful in treatment of rebellious mal perforant; Viannay has been equally successful with it, and Leriche in two cases. In one of his cases the affection returned a few months later, but the healing proceeded rapidly afterward. The aim is to stretch the perivascular plexuses, dilacerating the peri-arterial plexus. He calls the procedure "denudation of the artery and dilaceration of the perivascular nerve plexuses." The disturbances he seeks to remedy by this may not be the only elements in the clinical picture, but excluding these may transform the whole syndrome. The nerve ramifications may be involved in inflammatory sclerosis, and there is every reason to liberate them.

Presse Médicale, Paris

October 18, XXI, No. 85, pp. 845-856

83 Diathermia. A. Zimmern.

October 22, No. 86, pp. 857-864

84 Localization of Arsenic in the Viscera after Injections of Salvarsan. E. Jeanselme and others.

Revue Médicale de la Suisse Romande, Geneva

October, XXXIII, No. 10, pp. 721-792

85 *Classification of Nervous and Mental Diseases. (Le concept de psychasténie.) L. Schnyder.
86 The Internal Ear. (Exploration clinique du labyrinthe. Dernières acquisitions et vue d'ensemble.) H. Jollat. Continued.
87 Lymphogranuloma in the Mediastinum. Wanner.
88 *Tetanus of the Head. (Le tétanos céphalique). J. Mégevand.

85. **Classification of Mental Diseases.**—Schnyder thinks that in all the fluctuating conceptions of nervous and mental diseases the conception of psychasthenia, as Dubois formulates it, supplies a solid foundation for classification and treatment. This conception defines psychasthenia as a weakness in the primary judgment of things and events. Psychonervous disturbances can thus be traced to the habitual mentality. Effectual treatment, therefore, consists in rendering the judgment saner, bringing the individual to a juster appreciation of things and events.

88. **Tetanus of the Head.**—There was no history of trauma, and the young man had been previously healthy when the tetanus developed with facial paralysis and trismus. The reflexes were exaggerated but three were no other symptoms except that the larger muscles were slightly tender and showed a trifle of contraction. He was given chloral in large doses, 12 gm. a day for thirteen days. Then the chloral was suspended for two days, but aggravation of the symptoms and pain in the legs caused its resumption. Within fifty-one days he was given 456 gm. of chloral with final recovery. The disease evidently increases the tolerance for the drug. The mortality of tetanus of the head is only 36 per cent., according to recent statistics.

Semaine Médicale, Paris

October 22, XXXIII, No. 43, pp. 505-516

89 *Automatic Reflex Movements. (Réflexes d'automatisme médullaire et réflexes dits "de défense"; le phénomène des raccourcissures.) P. Marie and C. Foix.

89. **Automatic Reflex Movements.**—Marie and Foix have been studying the reflex movements which occur after the brain has been cut off from communication with the limbs, as in decapitated frogs. They conclude from their research that these reflex movements are not for the purpose of defense but are mainly the automatic movements of locomotion. The limbs are drawn up as in walking, the spinal cord functioning automatically when the brain is cut off. The reflex flexing of the limb is thus a sign of injury of the pyramidal tract. This assumption was confirmed at necropsy in three typical clinical cases. The reflex movements are generally moderate when the pyramidal tract is not much affected, but they become extremely pronounced when all the conducting routes are interrupted more or less completely, as by transverse myelitis or with paraplegia from compression. The tendon reflexes are exaggerated in the former, and the reflex automatic gait movements in the latter. These reflexes can even locate the site of the lesion in some cases. Study of them shows the connection between isolated facts which have hitherto seemed incomprehensible separate phenomena. These automatic, falsely styled "defensive" reactions fit into the great group of sensory-motor reflexes; they show the close connection between human pathology and experimental physiology and throw new light on the complex problems of reflex action and contractures.

Berliner klinische Wochenschrift

October 20, L, No. 42, pp. 1929-1976

90 *Scarlatinal Kidney-Heart Disease. (Zur Kenntnis der nephritischen Herzanomalien bei Scharlach und ihre Behandlung.) A. Baginsky.
91 Cultivation of Parasite of Rabies. H. Noguchi (New York).
92 Varying Resisting Power of Different Kinds of Leukocytes. (Resistenz der farblosen Blutzellen.) A. Fraenkel.
93 Rectal Etherization. (Neue Methoden der Allgemeinnarkose.) J. H. Cunningham (Boston).
94 Pathology of Shock. Y. Henderson (New Haven).
95 Vaccine Therapy of Cancer. A. Pinkuss and W. Kloninger.
96 *Immunization of the Blood against Septic Disease. P. Krohl.
97 Deformity of the Skeleton of the Trunk. (Die angeborenen Entwicklungsfehler des Rumpfskeletts.) M. Böhm.
98 The Surgeon and the Law. (Die Stellungnahme der Strafrechtskommission des Reichsjustizamtes zum ärztlichen Operationsrecht.) S. Alexander.
99 The Rizzoli Orthopedic Institute at Bologna, Italy. G. Joachimsthal.
100 *Tuberculosis in Prussia since 1876. R. Behla.

90. **Scarlatinal Heart and Kidney Complications.**—Baginsky reports some cases and expatiates on the benefit from sweating procedures in the moderately severe cases. They not only arrest by mechanical means the congestion and tendency to suffocation from the hydrops, but they relieve the heart and respiration by the diuresis induced. A typical case is described in which the temperature was 105 at first but dropped at once after venesection, and the sweating procedure completed the change for the better. When the temperature keeps high, these hot sweating procedures are contraindicated as fraught with too much danger, and cold packs should be given the preference, leaving the child for an hour or two to sweat in the cold pack. In a typical case reported, a month after scarlet fever, the symptoms of uremia, dilatation of the heart, hydrops, high fever and severe dyspnea, subsided under the cold pack in which the child, a little over 3 years old, was left to sweat for a time. It seemed to have a direct life-saving action. He does not advise but one such pack a day, and he warns that as children react more vigorously to therapeutic intervention than adults, the pediatrist must be even more cool and cautious than at the bedside of adults.

96. **Mercury for Immunization of the Blood Against Septic Disease.**—Krohl noticed that patients taking a course of mercurial treatment seemed to be peculiarly resistant to ordinary infectious diseases, especially to epidemics of cholera, in his practice at Kiev. This fact and others suggested that mercury might have an action on the blood rendering it immune to septic processes, and his experiments with seventy-eight rabbits apparently confirm this assumption. He found that rabbits injected with mercuric benzoate (hydrargyrum benzoicum), bore without harm the injection of serum from the blood of a woman who had died of puerperal fever, or injection of pure cultures of streptococci. The doses of the mercury were very small; a series of injections of 0.0015 gm to 1 kg. of the body-weight rendered the animal non-susceptible to infection with streptococci. A shorter series with a little larger dose also answers the same purpose. The drug showed such efficacy in the animals that he applied the same treatment to a number of patients threatened with septic processes, and reports a few typical cases to show the efficacy of intramuscular injections of this drug in prophylaxis of sepsis. Once developed, the septic affection is not modified by the small doses which he recommends. Among the illustrative cases cited is that of a woman of 29 who had chills and temperature of 39.1 C., pulse 128, the skin dry and the patient very restless and extremely thirsty, the third day

after delivery. She was given three injections of 0.01 gm. mercuric benzoate in the course of three days, under which the temperature and pulse subsided to normal. In another case with about the same symptoms after an artificial abortion, the mercury was not commenced until after the fourth day, and the patient died. Krohl regards these experiences as showing the importance of sterilizing the blood in this way while it is still possible to effect this.

100. **Tuberculosis in Prussia According to Age.**—Behla gives diagrams showing the mortality from tuberculosis according to ages since 1876. The total mortality has dropped from 30.97 per 10,000 living, in 1876, to 14.58 in 1912. Between the ages of 15 and 30 the decline has been from 26.91 to 17.48; between 30 and 60, from 48.62 to 19.49, and over 60, from 77.62 to 19.81. For children under 15, the decline has not been so great: Under 1 year of age the mortality was 22.24 in 1876 and 18.4 in 1912; between 1 and 5 years of age the figures are respectively 11.72 and 8.22; between 5 and 10, 4.17 and 4.32 and beteewn 10 and 15, 5.71 and 5.21. This lack of decline in the mortality from tuberculosis among children is remarkable when we consider that the mortality from other diseases among children has dropped so materially for the same ages. Diphtheria, for instance, from 45.09 to 6.98, and typhoid from 5.29 to 0.28. The figures for 1908 show that 1,423 of 2,852 infants succumbing to tuberculosis died in the first six months and 1,429 in the rest of the year. If congenital tuberculosis were very prevalent the proportion succumbing in the first six months would have been larger.

Correspondenz-Blatt für Schweizer Aerzte, Basel

October 11, XLIII, No. 41, pp. 1281-1312

101 Roentgenoscopy of Pulmonary Tuberculosis. H. Staub.

October 18, No. 42, pp. 1313-1344

102 Therapeutic Pneumothorax in Pulmonary Tuberculosis; Twenty Cases. O. Amrein and F. Lichtenhahn.

Deutsche medizinische Wochenschrift, Berlin

October 23, XXXIX, No. 43, pp. 2073-2128

103 *Combined Treatment of Cancer. (Die Bestrahlungs- und chirurgische Behandlung maligner Neubildungen.) L. Freund.
104 *Benzol in Leukemia. E. Mühlmann.
105 Experimental Research on Abderhalden's Serodiagnosis of Pregnancy. Naumann.
106 Recovery after Nephrectomy for Misplaced Tuberculous Cystic Kidney. (Grosse Solitärzyste in einer ins Becken gewanderten tuberkulösen, arteriosklerotischen Amyloidniere.) W. Falgowski.
107 Sleeping Sickness in Uganda. C. Schilling.

103. **Radiotherapy of Cancer.**—Freund emphasizes that the same rules apply to radiotherapy as to operative treatment of cancer, namely, that intervention should be as early as possible, before the lymph and blood-vessels have become involved and before long offshoots have been sent forth. When the technic becomes so perfected that all the cancerous tissue can be effectually destroyed by the rays applied from all sides, then radiotherapy can be regarded as a certain cure for cancer. Until these conditions are realized the rays have only a narrow field of action, and radiotherapy thus represents merely a painless and elegant method of palliative treatment: The cancer germs left, not destroyed by it, bring on recurrence with possibly even a more rapid course than the first time. It is impossible to say beforehand whether the rays will reach and destroy all the cancer cells, although this is always theoretically possible. He adds that even if the cancer is entirely cured by the radiotherapy, this does not guarantee that another cancer may not develop at some previously sound point, in the sound breast, for instance. Preceding removal of the pathologic tissue will naturally enhance the action of radiotherapy later. He thinks that the dosage in milligram-hours is not very scientific. The dosage should be calculated for the quantity of the radium element present, the length of the exposures, the mode of filtering, the superficial and deep extent of the cancer, and its histologic and physical character. His conclusions are based on 176 cancers treated by the Roentgen rays or radium in the last twelve years in Finger's service at Vienna. The best results were attained in case of epithelioma, ulcus rodens and Paget's disease. Thirty-two of the eighty patients in these categories have been cured for from one to ten years, that is, 35 per cent.

104. **Benzol in Leukemia.**—Mühlmann reports a case of lymphatic leukemia in a man of 37 with necropsy findings. He was given benzol during nearly six months to a total of 175 gm. There was marked improvement at first; after three or four weeks the condition was much improved and the condition continued to improve on suspension of the benzol for two weeks; then the leukocytes began to increase in numbers again but a further course of 40 gm. benzol reduced the leukocytes to 20,000. Then they ran up again and the patient succumbed. Necropsy showed extensive necrosis in the liver. Neumann has reported similar findings of necrosis in the liver of a man with myeloid leukemia treated with benzol. Pappenheim also found necrosis in the liver of rabbits given benzol, although in the rabbit liver the necrosis was in the outer portions; in the two clinical cases it was in the central part. These experiences emphasize the wisdom of keeping close supervision over the functioning of the liver during a course of benzol treatment.

Deutsche Zeitschrift für Chirurgie, Leipsic

October, CXXV, Nos. 1-2, pp. 1-210

108 Sacral Anesthesia in Surgery. M. Suchy.
109 Experimental and Clinical Research on Chronic Granulating Inflammation of the Bone Marrow; Staphylomycosis. F. Rost.
110 *Polyserositis. V. Esau.
111 Dislocation of the Knee-Joint with Inversion of the Patella. M. Frei.
112 Prophylaxis of Recurrence of Cancer. A. Theilhaber.

110. **Polyserositis.**—Esau operated for a supposed abdominal tumor in the case reported but no tumor was found, merely an enormously enlarged liver, with ascites. The liver tissue seemed normal and there was no pathologic history, no syphilis. However, a tentative course of antisyphilis treatment was instituted but no effect from it was apparent. The man of 28 soon required tapping and fifteen liters of fluid were siphoned out. During the three following years the patient had to be tapped at first every four months but later more frequently. Omentopexy was done (Talma operation) the fourth year but with only transient benefit. The necropsy findings after eight years showed typical polyserositis, iced liver and spleen, and chronic obliterating pericarditis. Tapping had been repeated eighty times and a total of 800 liters of fluid had been withdrawn. The man had been previously healthy except for typhoid at 11, and he had three healthy children. The second patient was a previously entirely healthy man of 49 and the disease ran an acute course in two months. The characteristic findings were restricted to the small intestine, causing multiple stenosis and agonizing colics. A laparotomy showed the small intestine enormously distended, with the characteristic iced appearance, the result of chronic peritonitis without effusion. The man died in collapse the second day. No signs of tuberculosis were found in either case. There seems to be no help for polyserositis except from operative measures and these usually come too late. The hope lies in some modification of the Talma operation—omentopexy—done before irreparable lesions have become installed. The trouble generally begins with a stormy onset and then passes into a chronic phase with recurring ascites, gradual weakening of the heart, edema of the legs and cyanosis. The patients are generally under 30 but middle age is not exempt.

Jahrbuch für Kinderheilkunde, Berlin

October, LXXVIII, No. 4, pp. 373-496

113 Mechanism of Cerebral Activity in Children. (Grundmechanismen der Arbeit der Grosshirnrinde bei Kindern.) N. Krasnogorski.
114 Factors which Stunt the Growth of Infants; Twenty-Six Cases. (Störungen des Langenwachstums der Säuglinge.) K. Stolte.
115 *Transillumination in the Diagnosis of Chronic Internal Hydrocephalus. (Die Strassburgersche Transparenzuntersuchung bei chronischem Hydrocephalus internus.) J. v. Bokay.
116 *Diphtheria Antitoxin Content of Human Blood Serum. H. Kleinschmidt.

115. **Transillumination in the Diagnosis of Chronic Internal Hydrocephalus.**—Strassburger in 1909 demonstrated hydrocephalus in a 3-months-old child with head of practically nor-

V. 61
1913

mal size. He had examined it under strong electric light in a dark room and had found the skull transparent. This transparency is present only when the thickness of the brain substance is not more than 1 cm. The bones of the child's skull are transparent under strong light, up to about the age of 3. Von Bokay gives histories of fifteen children with internal hydrocephalus whom he examined in this way. The degree of transparency depends on the thickness of the brain substance and the amount of fluid. The collection of fluid is frequently asymmetrical and the method gives information of practical value as to where puncture and drainage can be done most effectively and with least injury to the brain substance. It is particularly valuable in the diagnosis when the size of the head is almost normal and gives little or no indication of the condition. The findings in his cases are shown in eight colored plates.

116. **Diphtheria Antitoxin in Human Blood.**—Kleinschmidt concludes that the diphtheria antitoxin so frequently found in the serum of individuals who have not had diphtheria is due to latent infection with diphtheria bacilli. Protective substances must have been formed in sufficient quantity to avert an attack of the disease. He found antitoxin in the serum of two of eighteen infants free from any history of diphtheria, and in ten of sixteen others known to have had diphtheria up to a few months before and still harboring the bacilli. Technical details of his experiments are given.

Medizinische Klinik, Berlin

October 19, IX, No. 42, pp. 1769-1750

117 *Treatment of Embolism, Thrombosis and Gangrene. F. Lotsch.
118 *Treatment of Inflammation and Processes with Effusion. (Einwirkung parenteral eingeführter Kolloide und wiederholter Aderlässe auf die Durchlässigkeit der Gefässe.) F. Laithlen.
119 Improved Technic for Differential Atmospheric Pressure. (Die weitere Ausgestaltung der Unterdruckatmung für die Behandlung der Kreislauf- und Atmungsstörungen.) O. Bruns.
120 *Venous Thrombosis with Heart Disease. F. Glaser.
121 Acute Lymphogranulomatosis. H. Peiser.
122 Importance of Routine Cystoscopy. (Erfahrungen auf dem Gebiete moderner Urologie.) O. Kneise.
123 Kaolin-Glycerin Paste in Dermatology. P. G. Unna. Commenced in No. 41.
124 Döhle's Leukocyte Inclusion Bodies Not Peculiar to Scarlet Fever. M. Massini.

117. **Treatment of Thrombosis and Gangrene.**—Lotsch recapitulates the general view that the treatment of thrombosis lies essentially in prophylaxis. Passive exercise and light massage should be systematically applied to persons kept long in bed for any cause. With gangrene, the aim should be to ward off putrefaction. The surface should be kept dry with powder or superheated air, but he warns that the resistance of the tissues to heat is materially reduced, and great caution is required. Reports are accumulating of favorable results from local alternating hot and cold baths, changing from the hot to the cold water and back again repeatedly for fifteen minutes at a time. The alternation of anemia and hyperemia thus induced causes a gymnastic exercising of the vessels, and if kept up for a long time, up to several months, may realize great improvement. He says that fifteen cases are on record in which an attempt was made to extract the embolus in the pulmonary artery. Krüger's patient survived the operation for five days but then succumbed to pleurisy. Two other patients survived for fifteen and thirty-seven hours. In case of fat embolism, such as is liable to follow extensive fractures or crushing of the liver, it might be possible to expose the thoracic duct and divert its contents outward, as most of the fat is conveyed to the blood through the thoracic duct. In case of air embolism, especially when a vein is opened near the thorax, direct compression at once is the safest measure. The sound of the air entering the vein is never forgotten when once heard. A small amount of air is borne without harm, but when the blood in the right heart becomes foamy from admixture of air, the heart works in vain. As a last resort, the right ventricle might be punctured, to the right of the sternum, to release the air.

118. **Venesection and Gelatin in Treatment of Inflammation and Processes with Effusion.**—Luithlen has previously called attention to the modification in the test reaction of the skin after serum or colloidal substances have been injected. Recent research on serodiagnosis and serotherapy has confirmed his findings and also his assumption that the result has nothing to do with any property of the serum as an antigen but rather to the fact that the serum represents a colloidal substance and that it is to this colloidal property that it owes its efficiency in pregnancy dermatitis, etc. He has worked out a method of research to determine the permeability of the vessel walls under various conditions. About 100 c.c. of Ringer's fluid is injected into the abdominal cavity; half an hour later he injects into a vein in the ear 2 c.c. of a 10 per cent. solution of sodium ferrocyanid, and after intervals of one, two, three, four, six, eight and ten minutes, he withdraws a small amount of fluid from the abdominal cavity and examines it for the presence of the chemical. This series of tests is followed at once with a repetition of the procedure using 5 c.c. of a 2 per cent. solution of sodium iodid. The tests were made on rabbits, some of which had been previously treated with gelatin, some with colloidal silicic acid and some with serum, others with preceding venesection. The results show that there was marked delay in the passage of the intravenously injected chemical after the above preliminary procedures. On the other hand, the passage of the chemical into the abdominal cavity was notably accelerated when instead of the above, the animals had been treated beforehand with electrolytic substances or hydrochloric acid.

In short, the research reported demonstrates that parenteral administration of colloidal substances, albuminous or not, and repeated venesection materially reduce the permeability of the vessels in rabbits for chemicals introduced into the veins. These findings throw light on the benefit from Gilbert's autoserotherapy in pleurisy and peritonitis with effusion, and also on the benefit from repeated venesection in certain cases. They suggest that venesection deserves a prominent place in the treatment of various processes of an inflammatory nature with effusion, pneumonia, pleurisy, etc., as a reduction of the permeability of the vessels materially aids in recovery.

120. **Venous Thrombosis in Heart Disease.**—Glaser's patient was a young woman with mitral, aortic and tricuspid insufficiency who developed signs of obstruction of the superior vena cava. The right sternocleidomastoid muscle swelled first, then the parotid gland region on both sides, and the entire right side swelled enormously. Twenty-five cases of the kind are on record with necropsy in four; twenty-three of the patients were women, nearly all under 30. Chlorosis is probably a contributing factor.

Monatsschrift für Kinderheilkunde, Berlin

XII, No. 6, pp. 269-346

125 *Magnesium Sulphate in Treatment of Spasmophilia. N. Berend.
126 Variations in Weight on Withdrawal of Carbohydrates. R. J. Carneiro.
127 Case of Congenital Stenosis of the Intestine. K. Stolte.

125. **Magnesium Sulphate in Spasmophilia.**—Berend used magnesium sulphate subcutaneously in treatment in forty cases, twenty-seven of spasmophilia and fifteen of eclamptic children without spasmophilia. Detailed case histories and clinical charts are given. His initial dose was 0.2 gm. in the form of 15 to 20 c.c. of an 8 per cent. solution. He tried using 15 and 25 per cent. solutions, but with no better effect. Twice this dose could be given daily to infants without any toxic effects. The quickest and most intense effect was on the electric excitability of the muscles and the spasms of the hands and feet. It acts somewhat more slowly on the general spasms and Trousseau's sign, and least of all on spasm of the glottis. Results were generally obtained in twenty-four hours, and it was seldom necessary to continue the treatment longer than four or six days. Phosphorus and cod liver oil were given in conjunction with it after the second day. The two treatments supplement each other. There are two marked advantages with this over other forms of treatment: recurrence seems to be much rarer and the course of the spasmophilia is decidedly shortened. Moreover, with this treatment mother's milk is less of an essential. There is no danger of inanition because food does not need to be withdrawn as in other forms of treat-

ment. The only point to be insisted on in diet is that it must be poor in salts. The treatment is also of value in convulsions not due to spasmophilia if there is no cerebral irritation or disturbance of kidney function.

Münchener medizinische Wochenschrift

October 21, LX, No. 42, pp. 2321-2384

128 The Abderhalden Seroreaction in Epileptics. O. Binswanger.
129 *Electric Treatment of Stretched Abdominal Muscles in Parturients. (Behandlung der Bauchdecken und des muskulären Beckenbodens bei Wöchnerinnen mittels des Bergonié'schen Verfahrens.) G. Brommer.
130 *Silver Rod in Treatment of Fracture of Forearm. (Zur Behandlung von Vorderarmfrakturen mit Bolzung.) G. Schöne.
131 The Leading Ideas in Modern Physiology. A. v. Tschermak.
132 *Pathology of the Liver. W. Gundermann.
133 Salvarsan and Neosalvarsan in Concentrated Solutions. (Die Injektion konzentrierter Altsalvarsanlösungen mit der Spritze.) G. L. Dreyfus. (Intravenöse Injektionen von konzentriertem Neosalvarsan.) T. Katz and E. Saalfeld.
134 *Heart-Block Under Salvarsan. (Ueberleitungsstörung im Verlauf der Salvarsanbehandlung bei später Sekundärlues.) H. Fuchs.
135 *Acute Primary Diphtheritic Pneumonia. O. David.
136 Lead Meningitis. E. Plate.
137 Azotometer for Quantitative Determination of Urea, Uric Acid and Purin Bases in the Urine. A. Jolles.
138 Lay Praise of One Physician at Expense of Another. (Die falsche Behandlung oder der gelobte Arzt.) M. Nassauer.
139 The Rich Merchant and His Physician. (Die hohe Schule für Aerzte und Kranke.) M. Nassauer.
140 Disease of the Pancreas. A. Stauder. Commenced in No. 41.

129. **Electric Exercise of the Abdominal Walls after Delivery.**—Brommer applies Bergonié's method to exercise the muscles, without the cooperation of the patient, to restore tone to the abdominal wall in the puerperium. The method induces rhythmical contraction of the muscles without pain. The woman sits in a reclining chair which has large electrodes in the back and seat. The other electrode is laid on the abdomen and pressed firmly against the skin by bags of sand. The procedure was applied the fifth day after delivery for fifteen minutes, increasing on later days to forty-five minutes, with the weight of the sand bags up to nearly 70 pounds. No inconveniences or pain were ever experienced, while it was his impression that the muscles of the abdominal wall and floor of the pelvis regained tone with unusual rapidity and completeness. Encouraged by these results, he applied the method to patients after laparotomies. His experience with it in cases of obesity has also been encouraging, but not much success in this line can be realized with a confirmed and continuous large eater. The method is also useful to prevent atrophy after fracture of a limb. He reiterates in conclusion that this electric exercising of the muscles in the maternity and postoperative cases had a surprisingly good effect on the functioning of the intestines. The bowels moved regularly one or two hours after the sitting in two-thirds of the thirty parturients, and this effect was also apparent in the laparotomy cases. The article gives an illustration of a patient taking the treatment.

130. **Treatment of Fracture of the Forearm with Supporting Rod.**—Schöne uses a rod of pure silver, from 2.8 to 4 mm. in diameter, slightly rounded at the ends. He trephines the bone for the introduction of the rod and works it in through the bone marrow to reinforce the arm; the silver has also antiseptic power. Two illustrations show the exact technic. He has applied the method in six cases and consolidation followed rapidly in five and more slowly in the sixth patient.

132. **Pathology of the Liver.**—Gundermann found that ulceration developed in the stomach or duodenum in guinea-pigs after the left branch of the portal vein had been ligated, thus cutting off three-fourths of the liver. The clinical picture that resulted, the findings in the urine and after death, were all typical of true uremia, although a uremia of liver origin seems paradoxic. These experiences suggested that perverted functioning of the liver may be the cause of uremia in man. A number of facts that have been recorded sustain the assumption of the dependence of kidney functioning on the liver. In further experiments he ligated the common bile duct and the resulting cholemia also presented the clinical picture of uremia except for the absence of convulsions. The clinical symptoms and the findings after death were so closely alike under all these circumstances that the same causal moment must be postulated for both. It may be wise to drop the term "uremia" for "hepato-renal intoxication," and call "cholemia," "hepato-cholic intoxication."

134. **Heart-Block Under Salvarsan.**—Fuchs' patient was in the later period of the secondary manifestations of syphilis, the heart findings normal. He was given up to 2.3 gm. salvarsan in the course of nine weeks. Forty-eight hours after the last intravenous injection of 0.6 gm. of salvarsan, actual heart-block developed, the pulse dropping from 80 to 40; the diagnosis of heart-block was confirmed by the electrocardiogram. Fuchs explains this occurrence as due to the destruction of a nest of spirochetes in the bundle of His by the fifth injection of salvarsan. The endotoxins liberated by this destruction of spirochetes at this point caused such disturbance in the bundle that the heart-block resulted. As the toxins were absorbed, conditions returned to normal; in seven days in this case.

135. **Primary Diphtheria of the Lung.**—David states that a boy of 9 was taken with what was apparently pneumonia of the left lower lobe terminating in a crisis and followed by slight pleurisy. The child was apparently doing well when suddenly he seemed to be suffocating but was relieved by inhalation of oxygen and epinephrin. A pneumonia process had developed in the right lower lobe and the bronchi and trachea became obstructed so that an emergency tracheotomy was required. Diphtheric membranes were expelled through the opening; antitoxin was injected but the child died the thirteenth day after his first symptoms. Diphtheria bacilli were found in the lungs and air passages in pure cultures.

Virchows Archiv, Berlin

CCXIV, No. 1, pp. 1-160

141 *Pathology of the Thymus. C. Hart.
142 Effect of the Thymus on the Organism. Y. Yokoyama.
143 *Relation of the Thymus to Adrenal Secretion. L. Adler.
144 Early Stage of Fibrosis in Tuberculous Lungs. (Ueber Karnifikation in tuberkulösen Lungen.) W. Ceelen.
145 A Normal Substance in the Prostatic Epithelium of Men and Bullocks which has the Property of Double Refraction. E. Schrt.
146 Case of Malignant Neuroblastoma of the Sympathetic Nerve. N. Anitschkow.
147 Histology of Nephritis Caused by Vinylamin. Oka.

141. **Pathology of the Thymus.**—Hart finds that the thymus may persist and become enlarged but the functioning may be subnormal. The so-called status thymico-lymphaticus is due not to excessive thymus function but to a constitutional abnormality expressing itself in disturbances of the whole internal secretory system. The enlargement of the thymus is only one of its manifestations. The hyperplastic thymus seems to have a toxic effect on the heart. In many cases of exophthalmic goiter, enlargement of the thymus precedes the appearance of thyroid symptoms.

143. **Relation of the Thymus to Adrenal Secretion.**—Adler concludes from his research that the thymus secretion has the effect of lowering the tonus of the vascular system. Therefore, if the thymus secretion is increased, the adrenal secretion must also be increased to overcome this hypotonic effect.

Wiener klinische Wochenschrift, Vienna

October 23, XXVI, No. 43, pp. 1737-1784

148 Pernicious Anemia. E. v. Neusser.
149 Radium in Therapeutics. (Radium als Heilmittel.) W. Falta.
150 *The Blood in Werlhof's Disease. (Blutgerinnungsfähigkeit, Viskosität und Blutplättchenzahl bei Morbus maculosus Werlhofii.) O. Steiger.
151 Stenosis of Left Pulmonary Vein plus Paralysis of Left Recurrent Nerve; Four Cases. R. Purjesz.
152 Medical Inspection of Schools. (Zur Schularztfrage.) A. Schattenfroh.

150. **The Blood in Werlhof's Disease.**—Steiger gives the details of his research in two cases of this disease in which numerous tests were applied. The results showed that the coagulating power of the blood was very much reduced; there is evidently lacking some substance or substances, or they are inert for some reason, which are necessary for coagulation. The viscosity is also much reduced, as also the number of blood platelets.

V. 61 1913

Zentralblatt für Chirurgie, Leipsic

October 25, XL, No. 43, pp. 1657-1704

153 *Tetany with Abdominal Disease a Bad Sign. E. Bircher.
154 *Acute Congestion of the Liver from Acute Cardiac Insufficiency. (Ueber perakute Leberschwellung.) M. v. Brunn.

153. **Tetany with Peritonitis.**—Bircher has made a special study of symptoms suggesting tetany among 537 patients with various stomach and intestinal affections. They were noted in twenty-eight cases, and twenty-two of these patients died; all had peritonitis from perforation of a gastric or duodenal ulcer or appendix or from ileus, except in one case of fatal postoperative dilatation of the stomach and three fatal cases of peritonitis from other causes. No symptoms suggesting tetany were noted in twenty-five cases of simple gastric ulcer, nor in eighty-five of gastric cancer or hundreds of cases of simple appendicitis. The conclusion seems evident that absorption of toxins from a badly diseased peritoneum is responsible for the tendency to tetany, and consequently signs of it render the prognosis grave, especially tonic twitching in the arms and legs, the Chvostek facialis sign and the Trousseau sign. In a number of the cases it proved possible also to elicit the Schlesinger leg sign.

154. **Acute Congestion of the Liver.**—Von Brunn reports a case similar to the three recently published by Ortner and summarized in these columns November 1, p. 1670. Brunn's patient was a young man suddenly taken with abdominal pain increasing to extremely severe collapse in twenty-four hours. Examination then showed the heart with normal outlines, sounds pure, pulse 22 with irregular intervals, the abdomen retracted, the upper portion tender and stiffening at any attempt at palpation, the lower portion not tender, moderate dulness over the right upper abdomen, extending to below the umbilicus. The diagnosis veered toward perforation of the stomach, but the exploratory laparotomy disclosed no signs of inflammation and only a much enlarged liver and an enlarged and tough spleen. Relief was almost immediate after the exploratory operation, and the young man was soon completely restored. Eleven days later the heart was found extending a finger-breadth beyond the left nipple line and a systolic murmur varying in intensity was audible over the entire heart. This murmur was still perceptible nine days later, but the liver was apparently entirely normal. He explains the acute congestion in the liver in the same way as Ortner, Nature driving the blood into the liver in case of acute insufficiency of the heart, thus giving the heart a chance to recuperate as by a venesection.

Zentralblatt für Gynäkologie, Leipsic

October 25, XXXVII, No. 43, pp. 1581-1612

155 Sterilization of Pregnant Tuberculous Women. (Erfolge und Technik der einzeitigen Schwangerschaftsunterbrechung und Sterilisierung bei Tuberkulose der Lungen.) P. Werner.
156 Serotherapy of Eclampsia. (Ueber Schwangerschaftstoxikosen und ihre Behandlung mit Serum und Ringer'scher Lösung.) F. Engelmann.

Zentralblatt für innere Medizin, Leipsic

October 25, XXXIV, No. 43, pp. 1073-1096

157 Blood Findings, Especially Eosinophilia, with Spring Catarrh. (Blutbefunde beim sog. Frühjahrskatarrh.) Steiger and Strubel. Commenced in No. 42.

Gazzetta degli Ospedali e delle Cliniche, Milan

October 21, XXXIV, No. 126, pp. 1319-1326

158 *Treatment of Pyelitis by Lavage of the Renal Pelvis. (Sulla cura delle pieliti col cateterismo ureterale e lavaggio del bacinetto renale.) F. Cuturi.

158. **Local Treatment of Pyelitis.**—Cuturi insists that direct medication of the kidney pelvis through the ureter catheter is absolutely indispensable in all cases of pyelitis except those of tuberculous or concrement origin. He flushes out the pelvis in this way every day and instills a 1, 2, or 4 per cent. solution of silver nitrate not oftener than once in three or four days, as a rule, washing it out well afterward. In a case of bilharzia pyelitis reported he injected 5 c.c. of a 1 per cent. solution, rinsing it out after a few minutes. The pain was relieved at once. The procedure was repeated ten times on alternate days, gradually increasing the strength to 3 per cent., and a few supplementary times at week or fortnight intervals later. The patient was soon clinically cured. Eight applications conquered the pyelitis in a gonococcus case described and five in a colon-bacillus case of puerperal pyelitis.

Rivista Ospedaliera, Rome

October 15, III, No. 19, pp. 837-875

159 *Hereditary Ataxia in Pellagrin Family. L. M. Ruggieri.
160 Medical Fees in Ancient Times. (Gli onorari dei medici nell'antichita.) P. Picca.

159. **Friedreich's Disease in Brother and Sister.**—The first symptoms of the ataxic paraplegia developed at about the age of 12 in the brother and sister whose cases are reported. The patients are now 27 and 16. The young man had malaria of the tertian type as a youth, and all the members of the family show more or less signs of pellagra. Ruggieri discusses whether the pellagra may have been responsible for the disease. The type of paraplegia and ataxia seems to be identical in both. The disturbance in gait developed gradually, fully two years elapsing before the ataxia was well defined. The illustrations show the typical deformity of the feet.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

September 27, II, No. 13, pp. 985-1064

161 *Fatal Morphin Poisoning or Fatal Diabetic Coma? P. K. Pel.
162 Fermentation at 46° as Test for Drinking Water. (De gistingsproef bij 46° als hulpmiddel bij wateronderzoek.) C. Eijkman.
163 *Improved Technic for the Wassermann Reaction. G. Kapsenberg.
164 *Traumatic Neurosis. P. R. de Haan.

October 4, No. 14, pp. 1065-1152

165 *Diphtheria. J. L. Labberté and L. Talsma.
166 *Congenital, Familial Edema of the Legs. J. C. van Vliet.

161. **Poison or Diabetes?**—Pel discusses a recent medicolegal case to emphasize the necessity for a body of qualified medical experts appointed by the state to pass on all the forensic questions in cases like the one described. A man of 41 died with symptoms of diabetic coma. Weeks later, 0.0256 gm. of morphin was found in the exhumed body. Only the chemical diagnosis had weight with the court at the trial of the person suspected of having poisoned the deceased. All the clinical symptoms of the diabetic coma were systematically ignored in the evidence although they had been very prominent, in contrast to the symptoms from the morphin.

163. **Improved Technic for the Wassermann Test.**—Kapsenberg advises the use of the water-bath instead of incubating the test-tubes for the Wassermann test. This materially shortens the time required for the test. Half an hour is sufficient to read the results when the water-bath is used. The test-tubes are affected by the temperature of the water much sooner than in an incubator, and he states that the findings are more reliable. He says further that it is often difficult to procure fresh material for the antigen and, as usually prepared, it is not durable. These drawbacks can be avoided by using human heart tissue for the purpose, prepared in the form of a dry powder which is always ready for use and seems to keep perfectly. The antigen prepared from the heart powder according to his method is not hemolytic and does not inhibit the hemolysis from the complement. He never witnessed pronounced inhibition of hemolysis with a non-syphilitic serum.

164. **Traumatic Neurosis.**—The accident to the foot bringing on the neurosis occurred while the letter carrier was on duty. De Haan discusses in connection with this case the various phases of workmen's compensation and accident insurance. He warns that the indemnity should not be large in such cases, as the patient must learn to be self-reliant and not give up to chronic invalidism and thus exert a bad influence on subsequent cases of the kind. The amount of earning capacity left for the same or another occupation is also an important factor in estimating the compensation to be allowed.

165. **Diphtheria.**—There were 130 cases of diphtheria in the last two years at Krommenie, with a population of only 4,000. A careful epidemiologic study of all the cases is here summarized. There was paralysis of the heart in 34 cases and seven in this group died; 15 cases of paralysis of the soft palate;

4 of accommodation, and 1 of the internal rectus muscle; 3 of the back and 1 of the calf muscles, but the paralysis did not prove permanent in any instance. On account of the apparent mildness of the epidemic, antitoxin was applied in only 42 cases and 20 of these children had paralysis in some form; in 4 the paralysis of the heart proved fatal. Of the 88 children not given antitoxin, 3 died of cardiac paralysis of the 11 who had paralysis in some form. Of the 12 given antitoxin the first day, 6 developed paralysis and 1 died. Of the 17 receiving the antitoxin the second day, 8 developed paralysis and 2 died of cardiac paralysis. Of the 13 children who were given antitoxin at a still later date, 6 developed paralysis and 1 died from heart failure and 1 from the severity of the diphtheria. The paralysis seemed to occur in waves during the epidemic, some periods furnishing far more cases than others. Ninety-five bacillus carriers were found among 1,378 children tested for the bacilli. The carrier children were dismissed from school but no instance of infection from them is known. The epidemic, however, died out when the schools were closed. A number of the throat smears were negative at several examinations but later gave positive findings.

166. **Familial Edema of the Legs.**—Van Vliet gives the chart of a family in which congenital edema of the legs occurred in thirteen members in four generations, ten males and three females. In the six clinical cases no cause for the familial edema could be discovered.

Brazil-Medico, Rio de Janeiro

September 22, XXVII, No. 36, pp. 378-389

167 Acute Inflammation of Undescended Testicle. (Ectopia testicular.) F. Luz.

October 1, No. 37, pp. 390-401

168 Gait in Organic Hemiplegia. (Nota sobre o andar lateral na hemiplegia organica.) A. de Castro.

Semana Medica, Buenos Aires

September 25, XX, No. 39, pp. 696-756

169 Operative Treatment of Extreme Myopia. L. G. Doods and A. Gowland.

170 History of Cholelithiasis. J. M. Jorge.

Hospitalstidende, Copenhagen

October 8, LVI, No. 41, pp. 1197-1236

171 *Impressions of America. (Indtryk fra en Rejse i Amerika, Maj-Juli, 1912.) T. Rovsing.

October 15, No. 42, pp. 1237-1256

172 Cultivation of the Virus and Parasites of Poliomyelitis, Rabies, Scarlet Fever and Variola. H. Noguchi.

October 22, No. 43, pp. 1261-1292

173 *Polypous Gastritis. E. Meulengracht.

171. **Impressions of America.**—Rovsing depicts in flattering terms his impressions during his recent trip to America. He compares the various surgical centers he visited and the technic of the surgeons, and remarks that the tendency to copy after European technics and models is a distinct hindrance to the development of an independent surgery in America. He adds that American surgeons believe so implicitly in the supremacy of European surgeons that the result is a certain lack of confidence in themselves.

173. **Polypous Gastritis.**—The findings are illustrated of the gastritis with production of polyps discovered at necropsy of a woman of 66 and a man of 82. It had caused slight or no clinical symptoms. There was no sign of cancerous degeneration. Complicating malignant disease is known in only four of the twenty-four cases on record of polypous gastritis.

Hygiea, Stockholm

September, LXXV, No. 9, pp. 849-990

174 *Treatment of Empyema of the Pleura by Tapping and Injecting Formaldehyd and Glycerin. G. Nyström.

175 *Paroxysmal Hemoglobinuria from Chilling. O. Lindbom.

176 *Syphilis of the Lung. H. Lindvall and J. Tillgren.

174. **Empyema of the Pleura.**—Nyström reports in full fourteen cases of pleural empyema treated by tapping and injection of formaldehyd in glycerin. The results were not encouraging, and he says this method should by no means take rank with thoracotomy. Helling has been more successful with it, and Maldarescu reported in 1910 good effect from repeated injection of 10 to 12 c.c. of a 10 per cent. alcohol solution of alphanaphthol in seven cases of empyema.

175. **Hemoglobinuria from Chilling.**—Lindbom reports the minute details of a typical case of paroxysmal hemoglobinuria. The patient was a sailor of 46 and the attacks could be brought on by holding the hands in ice-water for fifteen minutes. The Wassermann test was positive. Some benefit was derived from cholesterin given in six intramuscular injections in the dose of 0.5 gm. cholesterin, in a 10 per cent. suspension in physiologic salt solution. The Wassermann reaction became negative after this, and the test chilling of the hands induced only a rudimentary attack of hemoglobinuria, and there was no further attack until forty days after the close of the treatment. Cholesterin was given later in an oil emulsion by the mouth, but it did not display any efficacy by this route as a typical attack followed next day on the test chilling of the hands. As cholesterin checks the Donath-Landsteiner reaction in the test-tube, Lindbom suggests that the autolysin involved in this reaction and the substances giving the Wassermann reaction may be identical.

176. **Pulmonary Syphilis.**—In the two cases described the findings in the lungs were not actually specific for syphilis, but the changes in the lungs were accompanied by adjacent lesions of unmistakable syphilitic nature, and the arteries also showed signs of syphilitic injury. The first case is interpreted as a true syphilitic affection of the lung; the second case as merely a patch of hepatization in the lung of a syphilitic. The first patient had no history of tuberculosis; the present lung affection had run its course in less than a year; there were no consonant râles and the sputum was merely catarrhal.

Ugeskrift for Læger, Copenhagen

October 9, LXXV, No. 41, pp. 1657-1684

177 *Combination of Various Forms of Arhythmia. O. V. C. E. Petersen.

178 *Hereditary Tendency to Hemeralopia. C. F. Heerfordt.

October 16, No. 42, pp. 1685-1716

179 The Virus of Fowl Leukemia. (Undersøgelser over Hønseleukaemiens Virus.) V. Ellermann.

180 Appendicitis in Femoral Hernia; Two Cases. H. Kaarsberg.

177. **Combined Arhythmias.**—Petersen reports four cases of a combination of various forms of arhythmia. In the first a man of 65 had complete heart-block associated with pulsus alternans. In the second case, the complete heart-block was associated with auricular flutter. In the third, the Adams-Stokes syndrome developed probably as a manifestation of poisoning from digitalis. Poisoning from digitalis was also probable in the fourth case in which auricular flutter was accompanied by coupled beats (bigeminia cordis). The appearance of coupled beats warns to suspend the digitalis, as a rule, but in the case described conditions grew so much worse on suspension of the digitalis for a few days that it was resumed again. The various curves of these cases are compared and the necessity for close supervision of patients taking digitalis is emphasized anew. The signs of intoxication may develop suddenly, even before the full therapeutic action has been manifested. Pulsus alternans is easily overlooked, he remarks, but it can generally be diagnosed by applying the cuff to the upper arm. Treatment is mainly by bed rest and a diet to spare the heart. Digitalis is not required unless for severe symptoms of insufficiency, and then only with great caution; it may correct the pulse in some cases but there is no doubt that pulsus alternans may develop as a result of digitalis poisoning. Auricular flutter with complete heart-block is not corrected by digitalis; the auricular flutter persists unmodified as a rule.

178. **Inherited Hemeralopia.**—Heerfordt explains night blindness and day blindness as the result in the majority of cases of a torpid condition of the retina, which in turn is the result of a general influence on the functioning of the retina from a defective nutritional condition. This so-called idiopathic form is important in general practice as the disturbance is so typical and as it is by no means rare, while it responds so promptly and effectually when the diet is changed to include proper amounts of fat and egg albumin. He urges practitioners to be on the lookout for it in children.

V. 61
1913